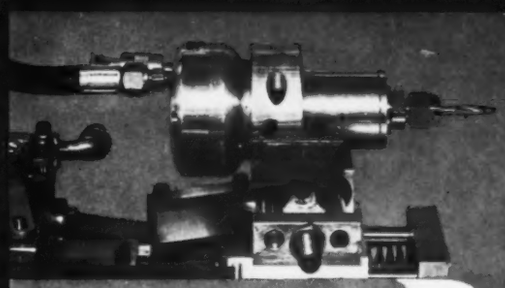
FIFTY CENTS

What's Behind the Growth at Broyhill

Glue Trouble Shooting

How Packaging Redesign Reduced Costs



JULY 1960

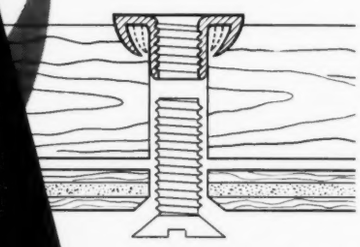
Advance Report on Two New Machines

Highlights of NAFM Fair

Breakthrough In Chair Design

Furniture Design & Manufacturing

6 NEW prong TEENUT®



Note how prongs toe-in after Teenut is driven into hole. Toe-in action plus multiplicity of prongs increases push-out resistance far beyond that of other pronged fasteners.

BOOTH #9
South Exhibition Hall
N.A.F.M. Show

gives you greatly increased push-out resistance

Here's an easily concealed threaded fastener that's built like a miniature bear-trap . . . with six claw-like prongs that penetrate, toe-in and grip so tight you really have to pound it to back it out of its hole.

With the new 6-prong Teenut, you'll cut your rejection rate and eliminate that old problem of the "lost fastener" . . . because this is one pronged nut that stays where it's put.

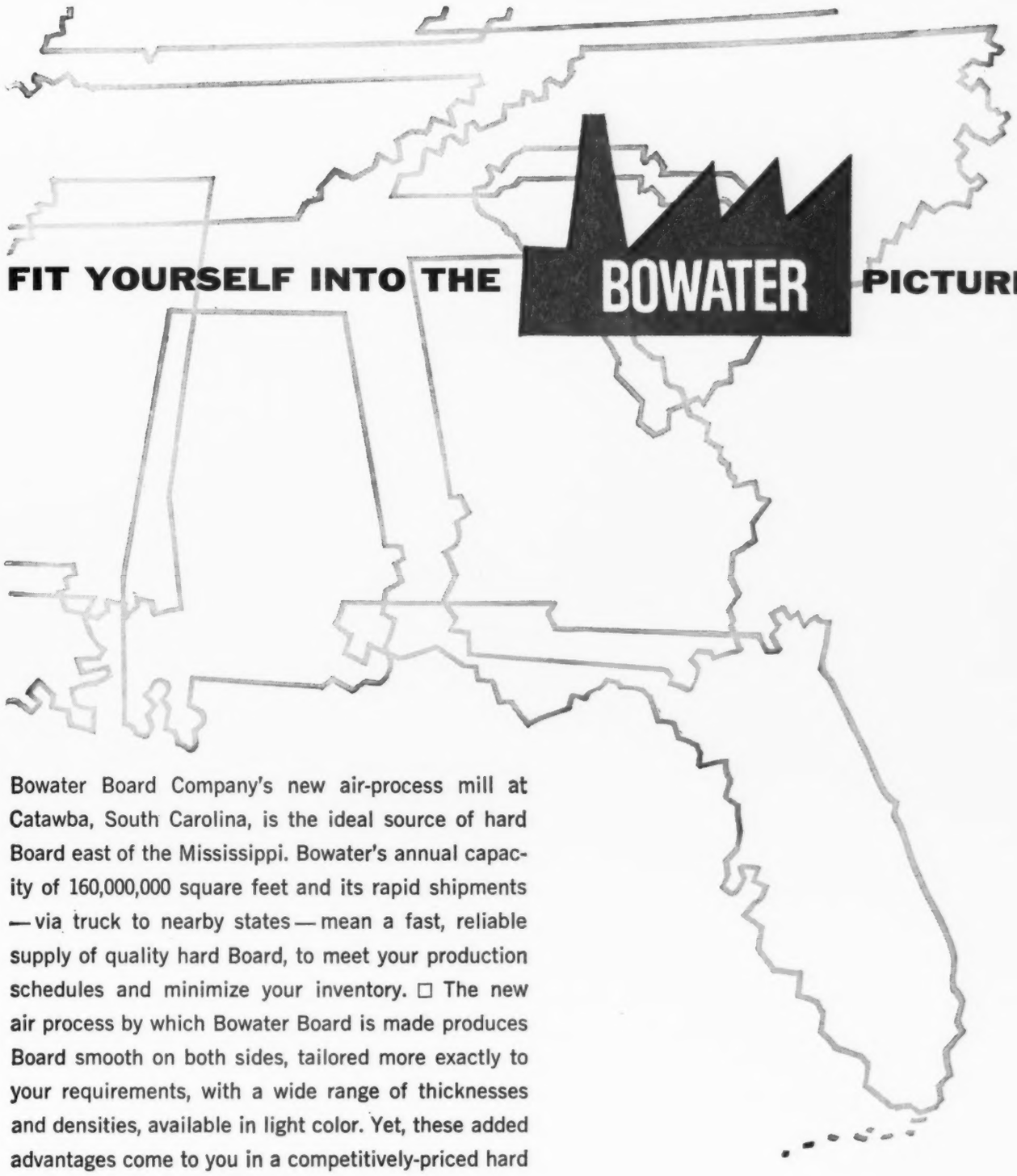
Full engineering details and prices on request. Currently available in the following sizes: 8-32, 10-24, 10-32, ¼-20, 5/16-18.

CARR FASTENER COMPANY
Division of United-Carr Fastener Corporation, Cambridge 42, Mass.

FURNITURE DOT FASTENERS

Offices in: Atlanta, Boston, Chicago, Cleveland, Dallas, Detroit, Kalamazoo, Los Angeles, Louisville, New York, Philadelphia, Syracuse

FOR DATA CIRCLE FDM NO. 1192



FIT YOURSELF INTO THE BOWATER PICTURE

Bowater Board Company's new air-process mill at Catawba, South Carolina, is the ideal source of hard Board east of the Mississippi. Bowater's annual capacity of 160,000,000 square feet and its rapid shipments — via truck to nearby states — mean a fast, reliable supply of quality hard Board, to meet your production schedules and minimize your inventory. □ The new air process by which Bowater Board is made produces Board smooth on both sides, tailored more exactly to your requirements, with a wide range of thicknesses and densities, available in light color. Yet, these added advantages come to you in a competitively-priced hard Board. □ Bowater Board is backed by the experience and research of the international Bowater Organization, one of the world's leading manufacturers of forest products. □ Write us or call us for full information.

BOWATER BOARD SMOOTH ON BOTH SIDES

BOWATER BOARD COMPANY • CATAWBA, S. C. • PHONE: ROCK HILL, S. C. 328-0131 • A MEMBER OF THE BOWATER ORGANIZATION

FOR DATA CIRCLE **FDM** NO. 1188

EDITORIAL

Are Your Communications Missing the Mark?

It is encouraging to note that more and more printed space in the nation's press is being devoted to furniture . . . both advertising and editorial features.

Too bad that so much of it misses the mark with our customers, Mr. and Mrs. Consumer.

We see advertisements illustrated with flawlessly produced pictures of furniture in room settings or vignettes, conveying a feeling of museum-like starkness, but lacking a home-like atmosphere.

Furniture is for *people* . . . and the presentation of furniture to the public should be *humanized.*

Many newspapers and magazines publish home furnishings features which also lack the human touch. One can thumb through page after page of beautiful room scenes that may win the plaudits of decorators and "oh's and ah's" of art directors . . . but you wonder, "Do people really live there?"

In sparkling color and gleaming black and white the room settings fairly shout: "Look! How beautiful! But, don't sit down, you may wrinkle the upholstery." And, "Children, keep out!"

Most of our customers for furniture are people with families, complete with kids. Families also have friends who are inclined to visit and sometimes share coffee over a coffee table, of all places!

Mrs. Homemaker must buy furniture that is practical for the tricycle set and the rock-and-roll teen-age crowd. We must tell her how our furniture meets these requirements. The impersonal approach may leave her with the feeling that our furniture "is beautiful, but not practical for my family." A little grass roots conversation with people who have families will prove they *do* say these things about our furniture.

Of course, there are some notable exceptions where furniture advertising has been *humanized,* including:

—The Simmons Company, in its "Temptation of Beautyrest" series.

—The Lane Company, in its hope chest advertising.

We in the furniture industry are not alone in our failure to give full play to the emotional appeals of our products. Automobile advertisements have long been rife with art and highly retouched pictures of cars in unbelievable surroundings, replete with spotless showroom glisten.

But Cheverolet, for one, has *humanized* its advertising. We now see advertisements in which a Chevy is parked on a beach at sunset, at a barbecue in the woods, even parked in the middle of a stream. In every case people are there, having fun made possible by the automobile that brought them to this memorable spot. What a natural way to sell automobiles!

Furniture can also be presented with emotional impact by putting real people in the ads who are having fun living with the furniture. We can prove that the upholstery is not allergic to kids. (We must not try to do this by showing a fiendish urchin pouring ink on a chair . . this is neither natural nor believable).

We can show that our furniture *is* as comfortable as an old shoe; *is* easy to put back in apple-pie order; *is* styled right for today's living; *is* practical and a good value. We can make the buying of furniture an exciting experience.

Furniture is a highly personal possession. We should use a personal approach in selling it. We will be on target if we *humanize* all our communications directed to the consumer.

R. A. Helmers, Editor

FDM
Furniture Design & Manufacturing

JULY 1960
VOLUME 32 NUMBER 7

The Management Publication Serving the Furniture Manufacturing, Upholstering and Bedding Industries

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OUR COLOR COVER—"Inspiration" collection by Premier Division, Broyhill, draws upon Moorish and Georgian English for its design theme. Story on page 24.

INSET—High speed drill head for newest furniture manufacturing machine. See page 38.

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FURNITURE DESIGN AND MANUFACTURING is published monthly by Graphic Arts Publishing Co. Suite 2109, 608 South Dearborn St., Chicago 5, Illinois. Phone WAbash 2-1272. Accepted as Controlled Circulation Publication at Chicago, Illinois. Subscription price: Single copy, 50c; one year $5.00. Foreign, $7.00 a year.

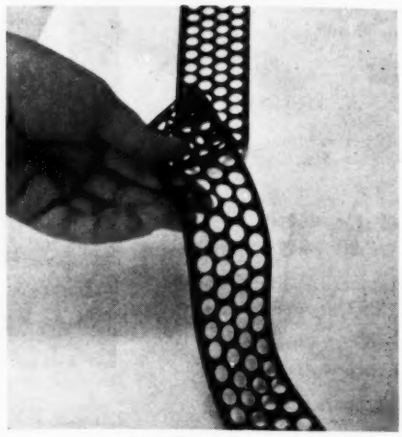
FDM LETTERS TO THE EDITOR

Letters of interest to the industry are invited

FURNITURE DESIGN & MANUFACTURING:

The enclosed strips of perforated rubber, one .060" thick, 1¾" wide, and the other .033" thick, 1⅜" wide, are scrap from a cutting operation in which the usable part is a disc of rubber.

Since the production of these discs will result in our having many hundreds of thousands of feet of this scrap, we are searching for a possible outlet for this material. It has been suggested to us that possibly the furniture industry might have some use for this perforated rubber strip, and we would appreciate any suggestions you care to give us as to whom we might contact among the furniture manufacturers or users of material of this character. The rubber compound is



a high grade Buna N stock with the following physical properties:

Tensile strength	1500 psi
Elongation	150%
Hardness	75 ± 5
Compression set	10%

This material is resistant to oil, water, fuels and solvents at temperatures up to 250° F.

This scrap material will also be available in other thicknesses up to .062" and can be furnished in any length up to 200 feet.

Any help you can give us will be much appreciated.

A. C. Hoffman,
Executive Vice President
Vernay Laboratories, Inc.

FURNITURE DESIGN & MANUFACTURING:

I would like to take this opportunity to congratulate you for your excellent article, "So You're Going to Hire a Designer?" appearing in the May 1960 issue of Furniture Design Manufacturing magazine.

It is rare that you see a writer write an article of this type in such unbiased and factual detail. I an certain that you should receive a number of congratulatory notes from designers for the excellent presentation of the story of adequate design services and you should likewise receive the plaudits of manufacturers for factually describing the best means for establishing satisfactory Management-Designer relationships.

Raymond Spilman, F ASID
Vice President
American Society of
Industrial Designers

FURNITURE DESIGN & MANUFACTURING:

We are very much interested in the article in the June, 1960 issue of FURNITURE DESIGN & MANUFACTURING, titled "Uniform Nomenclature and Specifications for Hardboard," as developed by the Technical Committee of the American Hardboard Association.

If possible, I would like to obtain six copies of this article for use in our plant. Please mark these copies, as well as any charges in connection with these reprints, for my personal attention.

I will appreciate your forwarding these reprints to me, if they are obtainable.

Paul E. Rumbaugh, Plant Manager
Kroehler Mfg. Co.

Sol Diamond

President, Diamond Brothers
Plants at Reading, Pa.,
Coal City, Ill. & Swaynesboro, Ga.

"Factoring is a science with Textile Banking Company. Our past experience of handling our own receivables with and without assignment through a bank has taught us that credit and collections is a specialty in itself and should be handled by experts. Textile Banking has the "broad view" since they have other clients in our field and are in a better position to judge a situation more intelligently. We have found Textile Banking Company to be most cooperative."

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Southwest Texbanc, Inc., St. Louis
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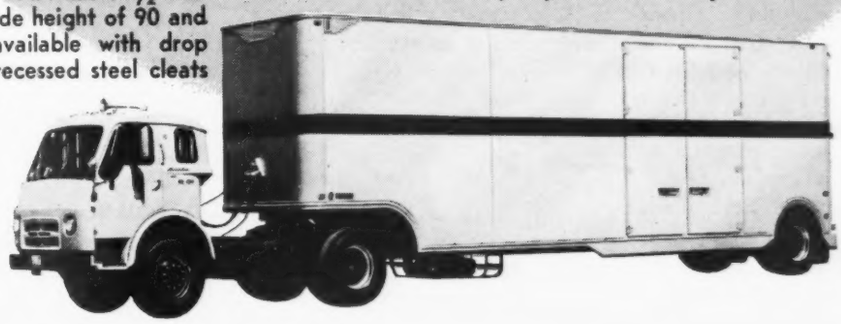
FOR DATA CIRCLE FDM NO. 1213

40-FOOT MODEL FCDT features new low floor height and new high capacity — 2,958 cubic feet — achieved by the use of specially-designed drop center axles.

Dorsey FURNITURE VANS haul the most... look the best!

Long recognized as the most beautiful furniture vans on the road, Dorseys also have maximum cubic capacity without sacrificing strength. Side posts and X-braces are 1½-inch-square steel tubes and exteriors are fully protected by half-inch bulb rub rails. Measure a Dorsey . . . examine it feature-by-feature. Your eyes and your yardstick will tell you that Dorsey's your best buy.

35-FOOT HI-CUBE VAN has 91½-inch inside width and inside height of 90 and 114 inches. Also available with drop axle. Four rows of recessed steel cleats have plastic shields.



100,000 miles and still like new! This Dorsey, one of several in the fleet of Jimmy Wilson, Jr. Storage of York, Pa., shows how Dorseys stand up in service.

See your Dorsey Distributor for trailers designed and built to fit your needs

DORSEY TRAILERS

DORSEY TRAILERS / ELBA, ALABAMA

A subsidiary of the Dorsey Corporation

FOR DATA CIRCLE FDM NO. 1195

FDM
FURNITURE DIGEST FOR MANAGEMENT

For more complete information on any of the Bulletins below, just circle the Bulletin Numbers on the READER SERVICE CARD which you will find elsewhere in this issue. A copy of the source material will be sent to you promptly.

Management Notes

"HOW TO DEVELOP A GOOD SALES MANUAL," a 12-page booklet on improving old manuals or compiling new ones, has been published by The Heinn Co. Available on request. *Bulletin No. J-140.*

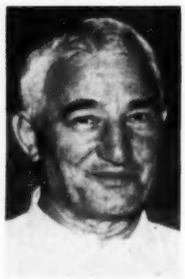
MAHOGANY ASSOCIATION announced the second annual Mahogany Awards Competition for "high achievement in design and craftsmanship of genuine mahogany furniture." All manufacturers exhibiting at the 1960 October markets in Chicago, High Point, or Grand Rapids are eligible. Designers may not enter, but will share in awards. The deadline for entries is October 15. This year, entrants will be asked to dramatize the "hidden values" in their furniture, through educational displays pointing out the various techniques, craftsmanship, design, and finish. Seven classifications are included: 1) Correlated Group; 2) Bedroom Suite or Group; 3) Dining Room Suite or Group; 4) Table or Groups of Tables; 5) Occasional Piece or Group; 6) Radio, Hi-Fi, TV Units; 7) Pianos and Organs. Winners in all categories will be featured in vignette displays. The mahogany sculpture, "Obelisk of Achievement," will be awarded to the best of show, and replicas to winners in each category. *Bulletin J-141.*

LATEX FOAM RUBBER COUNCIL announced a tag program to facilitate consumer recognition of genuine latex foam rubber products. Three-inch round tags will be furnished manufacturers and retailers of furniture and bedding. Member firms will support the program in their advertising.

HARDBOARD ASSOCIATION directors approved changing the name of the organization to *American Hardboard Association*, effective immediately, and ordered a six-month advertising program stressing brand name hardboard products. Annual meeting will be November 10-11 in Chicago.

WOOD OFFICE FURNITURE INSTITUTE reported that shipments for the first third of 1960 exceeded the same period in the last four years by at least 14%. The increase over 1957 was 16.7%, and over 1958, 35.2%. Increases over 1956 and 1959 were 14.3% and 14.7% respectively.

FURNITURE & BEDDING, SPRING INSTITUTE officers elected at first annual convention, Biloxi, Miss. are: president—*Mac Levine*, president of Webster Spring Co., Webster, Mass.; vice presidents—*Irwin Aronauer*, vice president of Joseph Aronauer, Inc., Brooklyn, N. Y., *Emmet N. Johnson*, president of Johnson Spring Cushion Co., Chicago, Ill., *Robert W. Bush*, vice president of Hickory Springs Mfg. Co., Hickory, N. C., and *William K. Gardner*, president of Gardner-Clark Spring Co., Los Angeles, Cal.; secretary-general—*Karl Ockershauser*, vice president of No-Sag Spring Co., Detroit, Mich.; executive secretary and treasurer—*Donald V. Reed*, Organization Service Corp., New York, N. Y.; legal counsel—*Herbert S. Blake, Jr.*, also of Organization Service Corp.



LEVINE

MIDWEST FOAM PRODUCTS CO., formed in March by *Albert W. Clutter*, president, has begun production of polyether and polyester products for the furniture and bedding industry. The firm is utilizing newly developed formulas from Germany to produce new forms of polyurethane foam. The plant is located at 1901 Marquette Ave., North Chicago, Ill.

CLUTTER

NATIONAL PARTICLE BOARD ASSOCIATION named *Robert E. Dougherty* executive director, according to an announcement by *David Greeley*, President. Mr. Dougherty will headquarter in the Association Building at 1145 19th St., N.W., Washington, D. C., pending the selection of a permanent location.

Supplier Announcements

NEW FACTORING SERVICE for manufacturers and wholesalers has been organized in Grapeland, Texas, with a branch office in Dallas. *Gulf Factors, Inc.* will specialize in buying 30-day invoices without recourse, and providing credit information, bookkeeping and collection services for manufacturers in the home furnishings industry and related fields. *Frank C. Dailey*, rancher and financier, is president.

DE VILBISS COMPANY'S St. Louis factory branch has moved to the Page Industrial Center at 1501 Fairview. The new building houses the area sales, engineering, service and warehouse facilities.

FEDERAL INDUSTRIES has appointed *Coltrane-Saunders Co.*, High Point, N. C., southeastern sales representative for Federan vinyl upholstery material.

ALLIED CHEMICAL, National Aniline Division, will triple its production of isocyanates, used in connection with polyurethane foam by mid-1961 at its plant in Moundsville, West Virginia.

DADSONS OF CLEVELAND has acquired the operations and business of the *Osborn Sample Co.*, Chicago, and will continue the firm's line of sample books and die-cut products. Shipments will be made from Cleveland, according to *James Osborn*, president.

DECAR PLASTIC CORP. and Decarlite, Inc. moved their general offices to a new building at 4501 W. North Avenue, Melrose Park, Ill.

TO PAGE 10

Fulton helps you SAVE all the way down the line

- **Save ordering time** — Most all of your material needs — from dyed denim to osnaburg — can be handled with one phone call or letter to Fulton.
- **Save freight handling time** — One source means one efficiently handled shipment.
- **Save on freight hauling costs** — When you order from Fulton, there's just one freight hauling cost, one shipping bill!
- **Save on inventory and warehousing expense** — Fulton's mass production under-one-roof allows you to order goods only when you need them. No need to warehouse some goods while waiting for others . . . you get most of your material at the same time.
- **Save on record-keeping** — One material bill cuts your accounting and bookkeeping costs to a minimum.

Guaranteed Quality Fulton Products:

- **Fulton DYED DENIM** — Firm weave of tested toughness. Wide selection of true, uniform colors — or we can dye to suit your needs.
- **Fulton BLACK CAMBRIC** — Beautiful, lustrous finish. All widths and weights.
- **Fulton UNBLEACHED MUSLIN** — Made from selected long staple cotton for extra strength. You can FEEL the quality. Full and split widths.
- **Fulton OSNABURG** — Strong and durable, made to our exacting standards. Many widths and weights to choose from.
- **Fulco FURNITURE PADS** — These soft but tough, non-wadding pads are lock-stitched to prevent raveling and shifting of filler.

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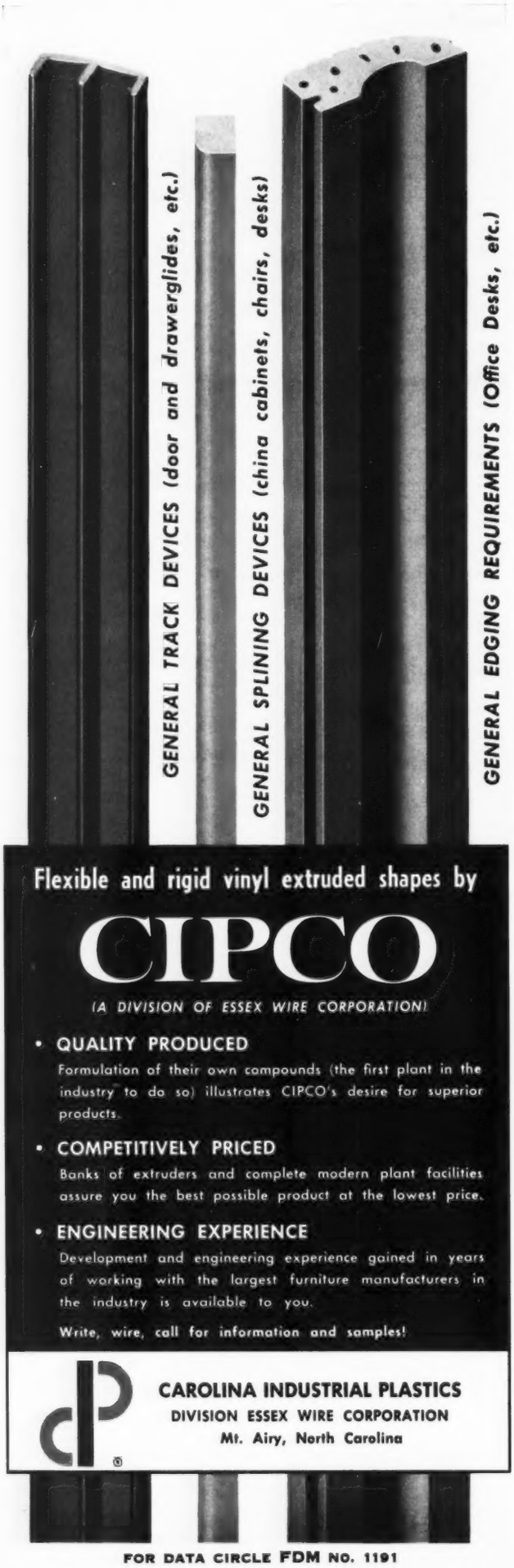
COTTON MILLS

Manufacturers Since 1868

FOR DATA CIRCLE FDM NO. 1198


GENERAL TRACK DEVICES (door and drawerglides, etc.)
GENERAL SPLINING DEVICES (china cabinets, chairs, desks)
GENERAL EDGING REQUIREMENTS (Office Desks, etc.)
Flexible and rigid vinyl extruded shapes by
CIPCO
(A DIVISION OF ESSEX WIRE CORPORATION)
• QUALITY PRODUCED
Formulation of their own compounds (the first plant in the industry to do so) illustrates CIPCO's desire for superior products.
• COMPETITIVELY PRICED
Banks of extruders and complete modern plant facilities assure you the best possible product at the lowest price.
• ENGINEERING EXPERIENCE
Development and engineering experience gained in years of working with the largest furniture manufacturers in the industry is available to you.
Write, wire, call for information and samples!
CAROLINA INDUSTRIAL PLASTICS
DIVISION ESSEX WIRE CORPORATION
Mt. Airy, North Carolina
FOR DATA CIRCLE FDM NO. 1191

CONTINUED FROM PAGE 8

GALON FABRICS, INC., 281 Fifth Avenue, New York, N. Y., has been organized as a distributor for Galon, a vinyl-coated fabric manufactured by *Galon AB* of Stockholm, Sweden. *S. Ludvig Holberg* has been named president.

Appointments

IRBY S. DE FENELON CO., Indianapolis, Ind., distributor of dimension wood parts and lumber: *R. E. Brandenburger, Jr.* to sales representative for northern Indiana, southern Michigan, northern Kentucky, Ohio and Illinois.

NATIONAL STARCH AND CHEMICAL CORP., New York, manufacturer of particle board and other products: *William Van Natta* to district sales manager for New York, New Jersey, Pennsylvania, eastern Ohio and Maryland.

CENTRAL STATES PAPER & BAG CO., St. Louis, Mo., has named *James Goldsmith* vice president of its Bedding and Furniture Division, which supplies mattress bags, polyethylene covers and protective treated papers to the industry. Mr. Goldsmith will be headquartered in the firm's Chicago office.

BRANDENBURGER

VAN NATTA

GOLDSMITH

ONSRUD MACHINE WORKS, INC., Niles, Ill., recently elected the following officers: Chairman of the board, *R. F. Onsrud*; president, *Charles R. Onsrud*; vice president and treasurer, *Miss Hjordis R. Krabol*; secretary, *John M. Wilkin*; assistant secretary, *O. B. Anderson.*

ONSRUD

MATTESON

HILDRETH

STANLEY HARDWARE, division of The Stanley Works, New Britain, Conn.: *John L. Matteson* to representative for industrial hardware sales in northern Ohio and Michigan. *Bruce F. Hildreth,* to representative for industrial hardware sales in southern New Jersey, eastern Pennsylvania, Delaware, Maryland, Washington, D. C., and northern Virginia.

DAYCO FOAM PRODUCTS CO., Div. of Dayco Corp., Dayton, Ohio, manufacturer of latex foam rubber and polyure-

thane: *Eugene P. Jones, Jr.* to branch manager, Chattanooga warehouse and sales office.

AMERICAN-MARIETTA CO., High Point Division, manufacturer of finishing materials: *Donald R. Schort* and *Arthur L. Johnson* to technical sales representatives.

SCHORT

JOHNSON

STOCKS

PARKWOOD LAMINATES, INC., Wakefield, Mass., manufacturer of decorative laminated plastics: *Landon C. Stocks* to factory representative in Ohio and western Pennsylvania; from Formica Co., div. of American Cyanamid Co.

FULTON COTTON MILLS, Atlanta, Ga., manufacturer of furniture pads, industrial fabrics: *Walter T. Miller* to New York sales.

NOPCO CHEMICAL CO., Plastics Division, Newark, N. J., *William M. Marshall* to manager of urethane foam production; from technical representative, Mobay Chemical Co.

SALTERINI, Division of the Columbian Bronze Corp., Covington, Va., manufacturer of wrought iron furniture: *Oliver B. Pinkney* to newly created post, vice president in charge of manufacturing operations.

MASSACHUSETTS MOHAIR PLUSH CO., Southern Division, Kings Mountain, N. C., manufacturer of pile and flat fabrics: *Alexander J. Maino* to executive vice president; from Wauregan Mills.

WISCONSIN WOOD PRODUCTS, INC., Phillips, Wis., manufacturer of hardboard: *Robert T. Miller* to general sales manager; from manager, special products division, Weyerhaueser Company.

MAGNAVOX CO., Electronics Division, manufacturer of radios and television sets, Fort Wayne, Ind.: *Samuel H. Newnam* to corporate purchasing agent, Fort Wayne, Indiana; *Peter A. Moran* to purchasing agent, Greeneville, Tennessee.

NACHMAN CORP., manufacturer of furniture springs, Chicago, Ill.: *Thomas A. Silberman* to sales manager of the Central Division.

Customer Expansions & Personnel Changes

LAMMERT FURNITURE CO. opened its fourth store in St. Louis, Mo., at West Florissant and Chambers Roads. *Gilbert Beckemeier* and *Robert Stretch* have been named co-managers.

UNITED FURNITURE CO. will open a new store on Shelbyville Road near Louisville, Kentucky. The store will be United's second suburban outlet and will occupy an air-conditioned one-story structure with a sales area of 21,000 square feet.

there's style...
gleaming
elegance...
and the utmost
in sophistication
designed into
every single
pull and knob—
among the hundreds—
in the Faultless
Hardware Line

Write for full Particulars

Faultless Hardware
Division of FAULTLESS CASTER CORPORATION
Evansville 7, Indiana
FOR DATA CIRCLE FDM NO. 1196

Breakthrough In

The step-by-step story of the polystyrene molding process, which can open new horizons to designers of seating.

By DAVID LePAGE

Photographs by author, except chair, courtesy J. L. Chase Co.

For months, the design firm of Henry Glass and Associates, Chicago, had been working on a chair with a flowing contour, free of the limitations of conventional frames. However, they had found no fully satisfactory means of producing it.

They made a wood chip model, and studied fiber glass, but when it came to working out an economically reproducible model, they ran into snags.

"When we took our first model to the upholsterers," Glass said, "they said it couldn't be done. And, although the molds we developed seemed to promise reasonable cost in the beginning, they all turned out to be too expensive as we got more involved in each design."

"Then the Norwegian walked in—out of the blue. I don't remember his name now, but he was representing a firm called Plastmobler A/S. He showed us a chair arm produced by their special process, and it looked as though it might be our answer.

"They made it with pellets of polystyrene, which they poured into an aluminum mold lined with burlap, and heated with steam. The plastic fused into a light, rigid shell, capable of assuming any contour.

"I referred him to our client, J. L. Chase, Co.," Glass said, "and asked my associates to collect some literature on the process." The latter, working closely with Glass on all projects, are Ben Waerenmeyer, who does much of the drawing board work and detailing, and Kei Yutsunomiya, who concentrates on models and mockups.

"Seating is my special field," Glass explained, "and sculpturing, or three-

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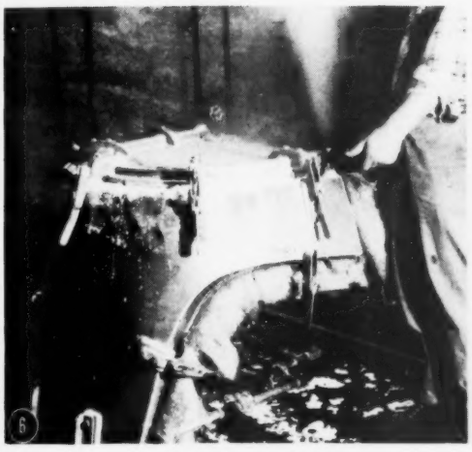
EUGENE FEINGOLD, left, general manager, of J. L. Chase Co., and designer Henry Glass confer on sketches of molded polystyrene chair designs.

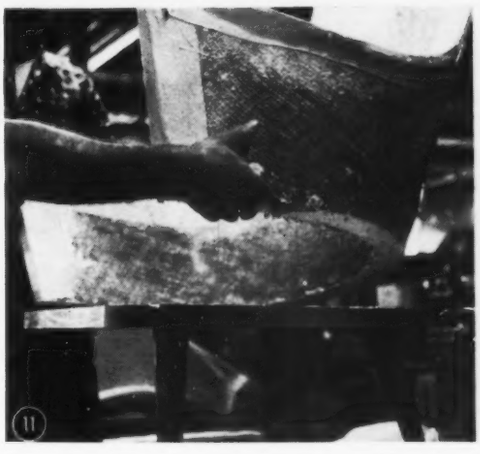
MODEL 952, one of 10 designs in Chase's "Styro-Mold Group," is 30″ wide, 31″ deep, and 42″ high. Its construction is detailed in the photos on these pages.

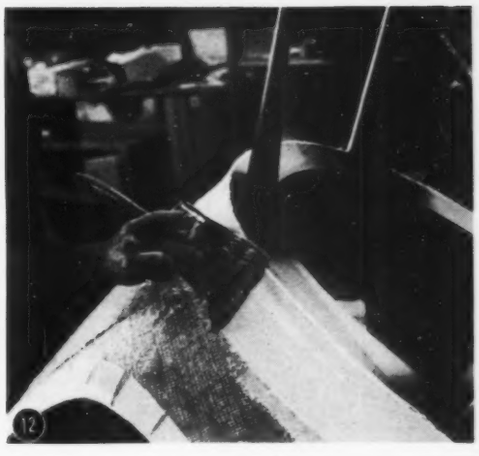
Step-by-Step process:

ORIGINAL PELLETS of polystyrene **(1)**, slightly larger than rounded grains of salt, expand to several times their virgin girth after a brief "cooking" **(2)**. They are then ready for molding. The mold is lined with burlap which is wetted **(3)** to make it conform. Mold is closed, ex-

Chair Design







panded pellets are poured in **(4)**, and packed to assure uniform density. Virgin pellets are also sprinkled on the bottom of the shell **(5)** to provide a dense area which will hold the nails used to fasten the shell to the wood base. The mold is covered, steam turned on and allowed to heat for three minutes. Then steam is turned off, excess released, **(6)**, and the mixture permitted to cool for five minutes. The fused plastic-and-burlap shell is removed **(7)** and set aside to dry for two hours, after which it will accept sizing. Excess burlap is trimmed from shell **(8)** and extra burlap applied to back of the shell to hold tufting thread **(9)**. Wood leg base is coated with Reichhold polyvinyl adhesive **(10)** and the shell placed on it **(11)**. Nails are used to reinforce the joint, and then muslin is applied around the outside of juncture, and coated with polyvinyl **(12)**. Muslin is also placed on all the shell's edges and sized for added durability.

Shell Chair Inspires New Cushion,

FROM PAGE 12

dimensional molding, is the ultimate goal of most chair designers. It presents a minimum of labor, has an attractive appearance, and offers more freedom for the designer.

"When I went to Europe in 1958, I found that various countries were using the Plastmobler process, but none were realizing its full potential. I had our sketches with me, and the Norwegians said the designs could be produced with their method. They hold world patents on the process, incidentally—only two or three American manufacturers, including Chase, are licensed to use them.

"Plastmobler suggested modifications for the sake of economy, and also worked out the first satisfactory low-cost method of making a knife-edge cushion to go with the chairs."

One of the early problems the designer faced in making use of the process was transmitting his designs to Norway intact. "We had to produce a prototype rather than rely on drawings," he said. "There's too much leeway for interpretation in free forms like these—by the model maker, the mold maker, etc.

"We made a prototype here out of styrofoam, which we carved by hand, and shipped it over there. They copied it in plaster, made a cast, and then poured aluminum into it, giving them a solid aluminum prototype. They covered that with aluminum plates, which they hammered around it. Then they installed steam pipes around the first shell, and made a second jacket around the pipes. Afterward, the assembly was cut in half and hinged. The whole thing cost us between $1,000 and $1,200—about half the price of the steel models used to mold fiber glass."

Although one of the biggest advantages of polystyrene is the cost factor, according to Eugene Feingold, general manager of J. L. Chase Co., the material is also more adaptable to upholstering than, say, fiber glass. "We have to make the cover in one piece, like a slip cover," he admitted, "but we can use tufted styling, because we can push a needle through the polystyrene in spite of its great strength. The shell will support a 200-pound man standing on the chair as it lies on its side.

"It's tricky to work out a one-piece fabric pattern that will fit like a

Upholstering methods are unique—

MODIFIED KNIFE-EDGE CUSHION was designed especially for molded chair using one-inch thick polyurethane foam. "Sandwich" is fabricated inside out **(13)**. After gluing edges with EC880 Neoprene base polyurethane adhesive, sandwich is turned right side out **(14)**. Cushion is filled with a half and half mixture of ground polyurethane and foam rubber **(15)** and weighed **(16)** to make sure exactly two pounds of the filler are used in each cushion. Back and arm patterns of polyurethane are glued together with the Neoprene adhesive **(17)**. Assembly is attached to shell **(18)**. A one-piece fabric cover is pulled down over the shell **(19)**,

Leg Concepts

glove," Feingold said, "but we've found that it's a help to pick the right material—one that will stretch both ways. We experimented with producing the chair for about six months.

"The shell is mounted on a wood base. That's the only place we do any tacking. It's glued to the base first, then positioned with stronghold nails, then covered with tape and sized. We dust the bottom of the shell with virgin pellets before closing the mold, to provide a denser area that will help to hold the nails. The nails don't actually serve any purpose other than to position the shell; the joint is held by the glue and tape. Nails don't have any holding power in this material.

"This model takes about one and a half cubic feet of the expanded pellets," Feingold added. "They have to be used within ten days of the time they're cooked. The virgin pellets can be stored indefinitely. From the original pellet to the finished piece, the material expands about 30 times. It's capable of expanding to about 60 times its normal size. According to our supplier, Dow Chemical Co., the density of the material ranges from ½ to 20 pounds per cubic foot, and it absorbs only a minute amount of moisture over a considerable period of time."

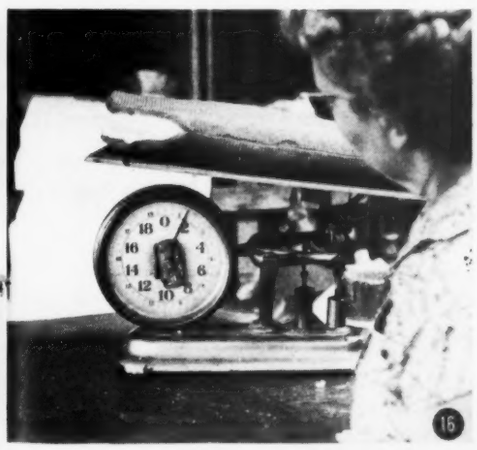
According to Glass, "Another big advantage of the process is that the shell isn't bound to a one-section thickness; all the others are. The material allows complete freedom; sections can be thick or thin, with abrupt or smooth transitions between them. This is one thing that eases the cover problem. Curves can be designed that are easier to follow; concave curves can be reduced or eliminated."

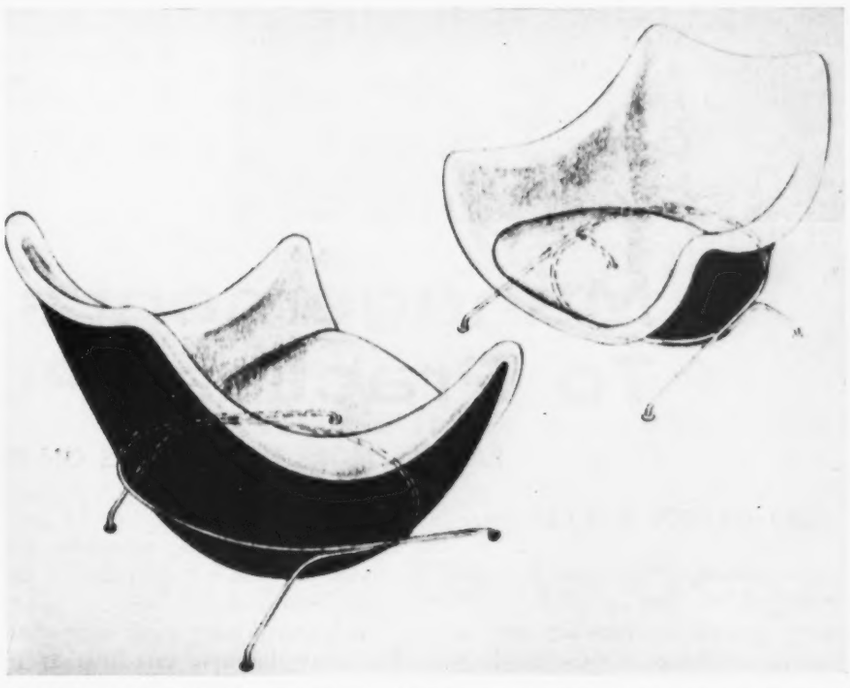
The first models of the Glass shell chair, including some mockups and some that were produced by production methods, were shown by Chase last summer. By the January show this year, the manufacturer was able to promise normal delivery. At present, there are five different designs, which, with the option of legs or swivel bottoms, provide 10 different models. They form a line called the "Styro-Mold Group."

"We're planning further innovations," Glass concluded. "All those in production now have loose pillow cushions. They're expensive; we're working on designs that eliminate the separate cushion. We also have a new idea for legs, a design that gives a cradle effect, and rocks slightly—in any direction—with the motion of the chair's occupant."

Glass' simplified cradle-like concept of a receptacle for mankind follows his conviction that a chair designer should strive to be a sculptor instead of a carpenter. "God, the Great Sculptor, formed man with complex curves," he said, "not along rectangular lines. So, a designer contemplating a resting place for man should also approach the problem as a sculptor, working with forms rather than frames." ■

tacked with Senco staplers around the inside of the seat, sewn at the outside corners of the arms, and tacked by hand on the bottom of the base. The completed chair is inspected by Phil Payne, plant manager **(20)**.





CHAIR OF THE FUTURE, molded of polystyrene, visualized by designer Glass, will have legs that will rock in any direction, following the motion of the chair's occupant.

ROOM-SETTING FLAVOR is maintained in this excellent photo (above) of furniture by Drexel Furniture Co. This is a good way to show supplemental pieces from a major grouping. Note how lighting reveals beauty of wood. When using dramatic shading, such as the top of this picture, care should be taken lest it reproduce too dark in newspaper printing.

GOOD ROOM SETTING PHOTO, (above, left) shows seating pieces by Pullman Couch Co. in natural home scene. Note how photo lends itself to cropping as desired by the editor for various space requirements. Photos shown on this page were taken under direction of Home Furnishings Industry Committee.

A NUMBER OF PIECES are shown to good advantage in this photo (left), which was released exclusively for consumer publicity through HFIC. Photos such as this show sufficient detail to also serve as room-setting sales photos, demonstrating the decorating mood of the furniture.

Management's Guide To Practical Publicity

PART II: MORE HOW-TO TIPS ON PUBLICITY

By HELEN WILLIAMS

Last month we discussed four general types of "free" publicity outlets often ignored by manufacturers, including showroom display buildings, trade and consumer shows, associations, and suppliers.

Following are some tips to help firms of every size, especially the smaller ones, do a good publicity job at moderate cost.

A first and very basic suggestion for every business executive is to read at least one good book on public relations, to get a sound picture of the ethics and function of publicity and the jobs publicity can and cannot be expected to do.

This tip is virtually a "must" before embarking on a do-it-yourself publicity program.

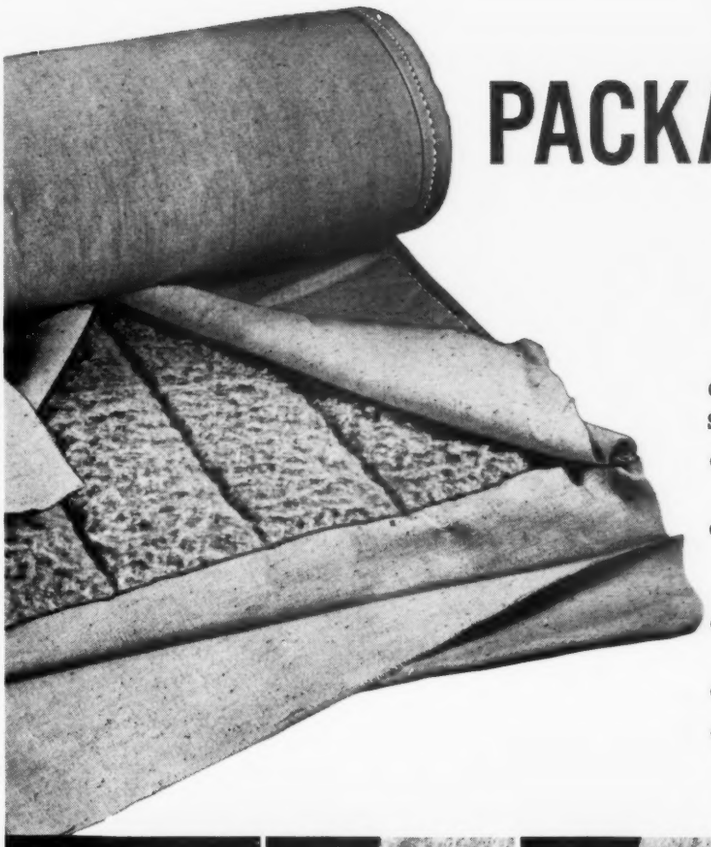
Ideally, every manufacturer should

TO PAGE 46

cut out all waste with

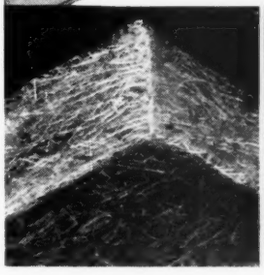
Burton-Dixie PACKAGED PADDING

. . . made exactly to your specifications



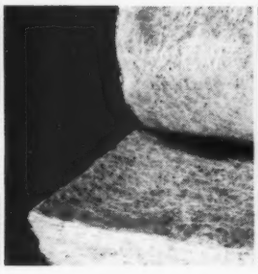
combines sewed padding securely stitched to a burlap skirt.

- **Eliminates two complete operations in your factory**
- **Cuts out all waste of insulator, padding and burlap because Burton-Dixie's sewed padding is made exactly to your specifications**
- **Speeds up your production and assures a uniform finished product**
- **Available in any size or shape**
- **Reduces your inventory to one item only instead of three**



SI-LATEX . . . a combination of interstitched sisal and pure latex, vulcanized together to make an extra strong spring insulator.

- **Laboratory proved to outwear ordinary spring insulators 2 to 1**
- **Eliminates all spring feel . . . cannot cup or hollow out**
- **Available cut to any size or shape . . . plain or stitched to cotton felt**

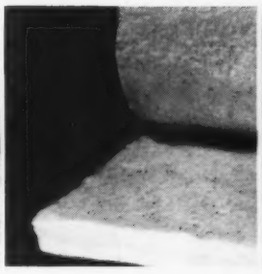


SISAL The finest quality you can buy . . . consisting of only the toughest, whitest sisal fibers available.

- **Cut to any size or shape**
- **Also available in rolls of any width**
- **Loose punch for a soft pad . . . or tight punch for a firmer pad**
- **Loom pad also available for a much firmer pad**

SEWED PADDING Spring insulator and fine quality cotton padding sewed together to save you labor and assure uniformity. For use on all spring constructions.

- **Si-Latex — Cotton. Burton-Dixie's exclusive Si-Latex insulator and cotton padding**
- **Sirex — Ordinary sisal insulator and cotton padding**



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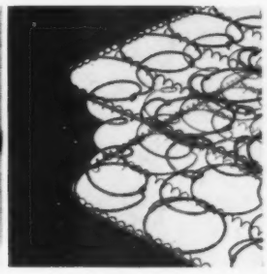
- **Made of 100% all new material**
- **Furnished to any thickness and widths**
- **Cut to any sizes or shapes**



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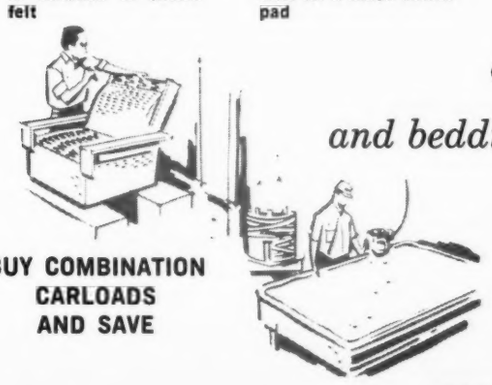
- **All standard coil counts available**
- **Any gauge wire you prefer**



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FOR DATA CIRCLE FDM NO. 1190

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IN OUR AUGUST ISSUE

- Booth by booth directory
- Photos of exhibit materials
- Who will be there
- Floor plan of exhibit halls
- Advance registration form
- * Buyers guide reply card
- Special features and much, much more!
- Regular Departments and Features

* Buyers Guide Response Card will key every exhibit, every advertiser and editorial material so that you can obtain additional information whether you attend the convention or not.

We urge you to attend the NAFM Supply Fair and Convention on August 27, 28, 29, 30 at the Conrad Hilton Hotel, Chicago, Illinois. This will be YOUR only opportunity to see what's New and different in the way of material, equipment, supplies and services all under one roof.

Mark your calendar—plan to attend! August 27, 28, 29, 30—1960

FDM FURNITURE DESIGN AND MANUFACTURING
608 S. Dearborn Street Chicago 5, Illinois

The MANAGEMENT Publication serving the Furniture Manufacturing, Upholstering and Bedding Industries.

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IT'S NEW: (Materials, Supplies, Equipment, Components, New Literature)

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485 486 487 488 489 490 491 492 493 494 495

FDM Numbers: (Advertisements)

1184 1185 1186 1187 1188 1189 1190 1191 1192 1193 1194 1195 1196
1197 1198 1199 1200 1201 1202 1203 1204 1205 1206 1207 1208 1209
1210 1211 1212 1213 1214 1215 1216 1217 1218 1219 1220 1221

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Exhibit 5. Primary Sales Data

DATA TABULATED	CODE IN RATIO Number	Dollars
TOTAL NUMBER OF CONTACTS	1	..
TOTAL AMOUNT SOLD & QUOTED	..	12
Total Existing Customer Contacts	2	..
Total Existing Customer Sales	..	13
SOLD NEW Products	3	14
SOLD EXISTING Products	4	15
QUOTED NEW Products	5	16
QUOTED EXISTING Products	6	17
Total New Customer Contacts	7	..
Total New Customer Sales	..	18
SOLD NEW Products	8	19
SOLD EXISTING Products	9	20
QUOTED NEW Products	10	21
QUOTED EXISTING Products	11	22
Total Customers Sold	23	25
Total Customers Quoted	24	26

Exhibit 6. Elementary Sales Ratios

NUMBER	TITLE	FORMULA
SV	New Customer Sales Productivity	$\frac{19+20}{25}$
SVII	New Accounts Direction	$\frac{10+11}{1}$
SXIII	Quotation Activity	$\frac{24}{1}$
SXIX	New Business Attempts	$\frac{21+22}{25}$
SXXIV	Average New Customer Quotation	$\frac{21+22}{10+11}$
SXXXVIII	Productivity Return Index	$\frac{12}{23+24}$

Condensed excerpts from the forthcoming book by Spencer A. Tucker, to be published in late 1960 by the McGraw-Hill Book Company. Copyright 1960 by Spencer A. Tucker.

Exhibit 7. Cumulative Sales Data

DATA TABULATED	CODE IN RATIO
Customers' Estimated Yearly Potential	59
Customers' Cumulative Potential to date	60
Sales this Period	61
Cumulative Sales to date	62
Contacts this Period	63
Quotations this Period	64
Cumulative Quotations to date	65
Total Number of Companies Contacted this Period	66
Total Number of Companies Quoted this Period	67
Total Number of Companies Sold this Period	68
Total Number of Different Companies Sold to date	69
Total Cumulative Expenses to date	70
Cumulative Salary Expense to date	71
Cumulative Entertainment Expense to date	72
Cumulative Automobile Expense to date	73
Cumulative Contacts Made to date	74

Exhibit 8. Tertiary Sales Ratios

NUMBER	TITLE	FORMULA
SA	Customer Potential Acquisition	$\frac{62}{60}$
SG	Sales-Expense Index	$\frac{62}{70}$
SJ	Quotation Acceptance	$\frac{62}{62+65}$
SK	Quotation Mortality	$\frac{65-62}{65}$
SL	Expense Productivity	$\frac{65+62}{70}$
SAA	Sales, Expense & Contact Effectiveness	$\frac{\text{Ratio SG}}{74/69}$
SCC	New Account Probability	(Ratio SXIX) (Ratio SJ)
SFF	New Sales & Account Performance	$\frac{19}{23}\times\frac{19}{25}$
SHH	New Customer Sales-Contact-Account Performance	$\frac{\text{Ratio SV}}{(7/1)\ (7/8+9)}$
SII	Current Trend Index	$\frac{61}{68}\times\frac{69}{62}$
SNN	Overall Performance Index	Ratios SA X SG X SJ

Essential Controls For Effective Management*

Part 3

BY SPENCER A. TUCKER

Partner, Martin & Tucker, Management Consultants, Little Neck, N. Y.

With the industrial competitive shift into the subtler expense areas of company economic structures, which are highly refined, management must be more scientific. Years ago, competitive opportunities lay in getting a "buy" in materials, or being located in a less costly labor market. Then the minimum wage law became the great equalizer and materials costs differences did not make the "shopping" effort too worthwhile.

Today, management must police and act in every cost-producing area to accumulate profits. Just as important they must have the facts from which to evaluate and preserve profit areas, appraise and eliminate loss activities. To do this they need current, integrated data, rapidly presented to enable fast management action. This is the pattern of consistent profit-making.

In the events gyrating in the production, sales and capital areas, some are seen and given economic meaning. This is done in production by means of ratios and by interrelating their movements.**

Sales MC:

The "MC" technique develops ratios from heretofore unrelated data normally available in company records. This article deals with constructing ratios with which to appraise the sales effort of the individual salesman. Control is established by interrelating the movements of these various ratios over a period of time to predict their pattern of behavior.

The ratio examples shown deal with the man. However, it should be pointed out that these same ratios can be used to appraise *product* activity to assess the value of the product mix.

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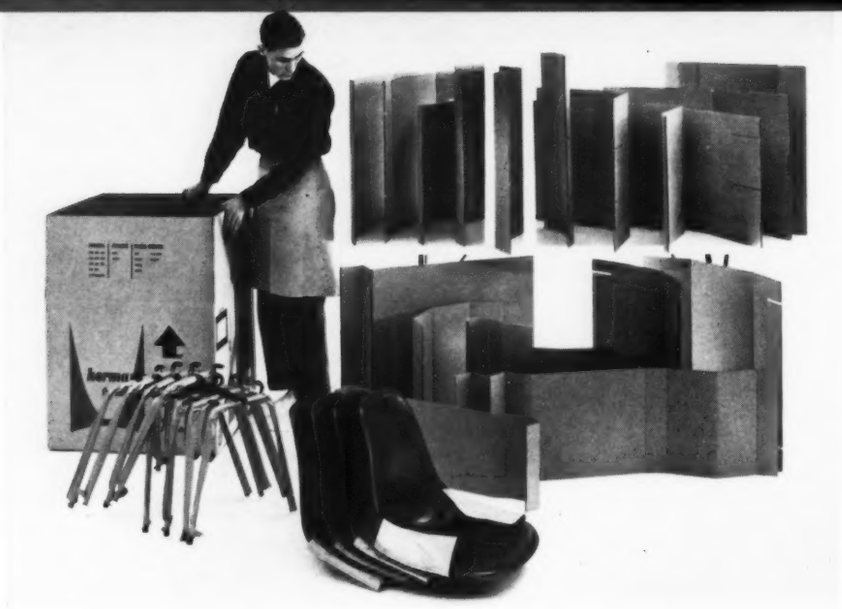
**Described in previous part.



Redesign

Within the last year, packaging has assumed some entirely new dimensions at Herman Miller, Inc., pioneer manufacturer of modern furniture, located at Zeeland, Mich. A partial overhaul of the firm's corrugated shipping containers, coordinated with the opening of a new production plant and a thoroughgoing modernization of manufacturing methods, has proved advantageous in six different ways.

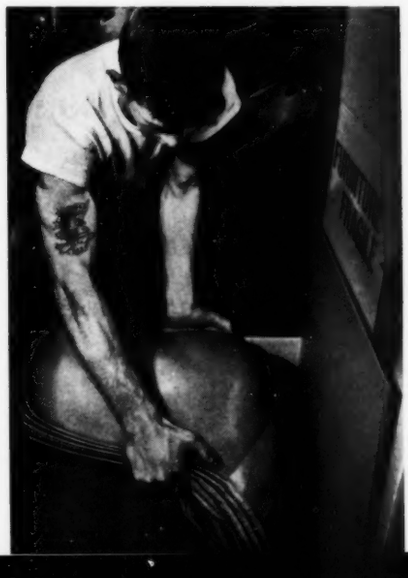
Developed by Packaging Corporation of America, in cooperation with the Herman Miller staff and the company's Director of Design, George Nelson, the packaging redesign program serves these functions:

1. Permits more efficient ordering of packaging materials and inventory control.
2. Effects substantial savings of plant storage space.
3. Makes possible a less costly and speedier method of materials handling of packaging and supplies.
4. Reduces considerably the cost of packaging materials.
5. Improves and streamlines the company's methods of packaging.
6. Provides a more distinctive container which merchandises as well as protects the products.

Before the redesign program began, Herman Miller utilized a variety of corrugated shipping containers and a selection of 19 different sizes and types of corrugated interior fillers.

Before—Prior to packaging redesign, Herman Miller workman required ten minutes to package four knocked-down chairs in one carton. Several minutes were consumed in folding, combining and fitting three separate fillers which were selected from the 19 carried in stock (see above). Cross-section of old package is shown at left.

FOUR BASIC MOVEMENTS are now required to package four knocked-down Eames chairs, below. Average time per package: 3.33 minutes.



After—Same workman now packages 12 chairs in three cartons in ten minutes, selecting from six interior fillers (shown above). Two fillers are now dropped into place in a single motion. Cross-section of new package is shown at left. Photos by Rooks Photo, courtesy Packaging Corporation of America.

n of Packaging Reduces Costs

As the company expanded its product lines, adding the distinctive Charles Eames all-purpose plastic chairs, packaging methods became more and more varied to meet the requirements of each order. Packaging materials, purchased from several suppliers on an "as needed" basis, arrived in bulk lots. Problems of storage, inventory control, and materials handling became increasingly complex.

First step in the redesign program was to develop generally smaller standardized package sizes. Five uniform containers were agreed upon, three of them smaller and more easily handled than their predecessors.

In addition, after a thorough study of the product line and the methods of using fillers to protect products inside the containers, Packaging Corporation of America engineers reduced from 19 to six the number of fillers required for all packaging.

Because the new packaging program combines with the company's overall modernization program and plant move, the total cost savings are difficult to estimate. However, individual areas of cost reduction can be pinned down.

With the smaller and more uniform containers and the reduced number of fillers, for example, Herman Miller, Inc., has decreased the cost of its packaging materials by 31 percent.

The six new-type fillers require less than half the floor space formerly needed to store the 19 old-type fillers.

Speedier handling of packaging materials on the assembly line is another result of the container redesign program.

Before the packages and fillers were redesigned, a single Herman Miller production worker on the assembly line took ten minutes to package four Charles Eames chairs, knocked down, in one carton. Now, with less fillers to choose from and more streamlined methods, he can package three times as many products—12 chairs knocked down in three cartons—in the same ten-minute period.

Hidden savings accruing to the company from its packaging improvement program include approximately $2,000 per year released from inventory due to the more accurate inventory control system permitted by the uniform packaging materials and fillers into its IBM-controlled parts ordering system. This means that they can reduce the number of orders per year from 15 to one or two, with the blanket orders involving regularly specified delivery schedules. Administration time in obtaining supplies thus will be reduced also.

Packaging Corporation of America now delivers the uniform new packaging materials in palletized loads,

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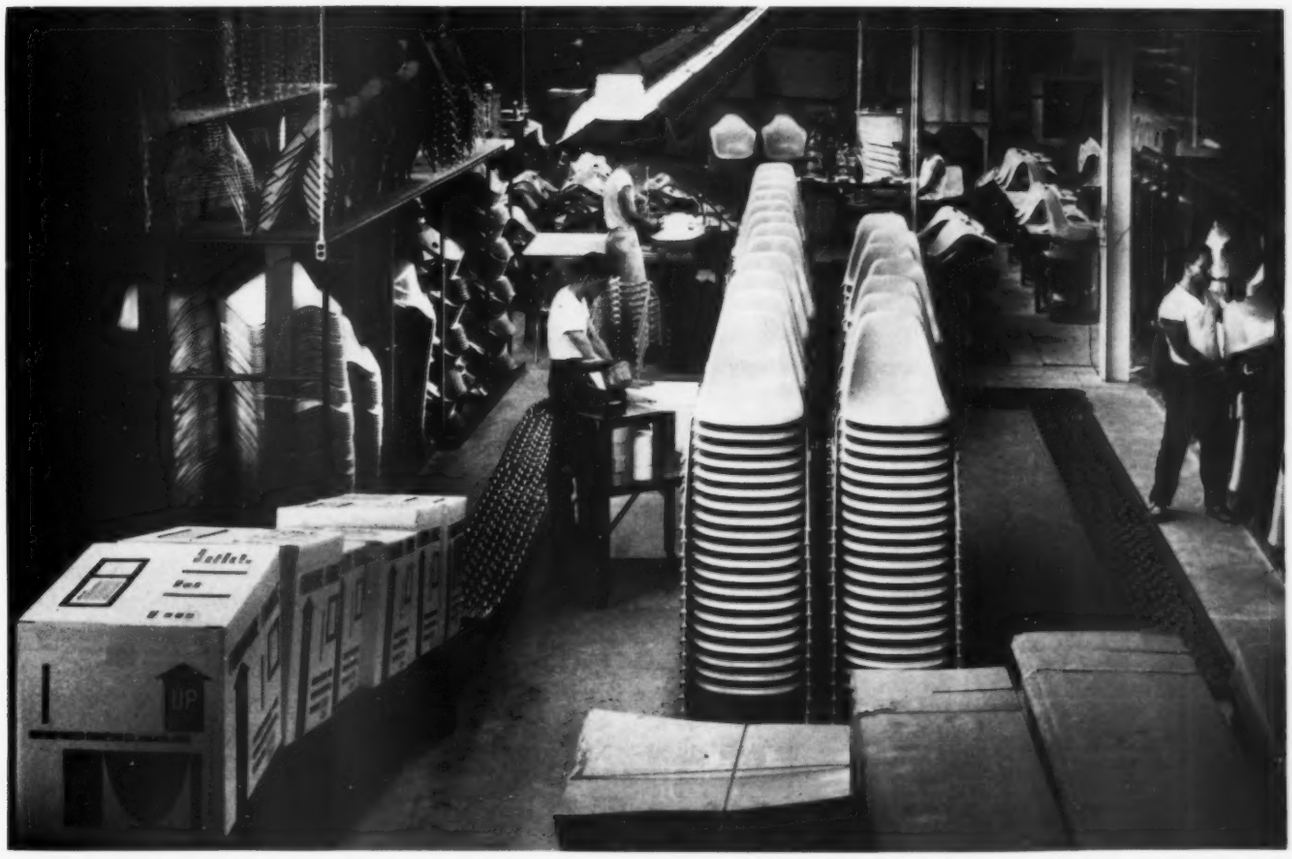
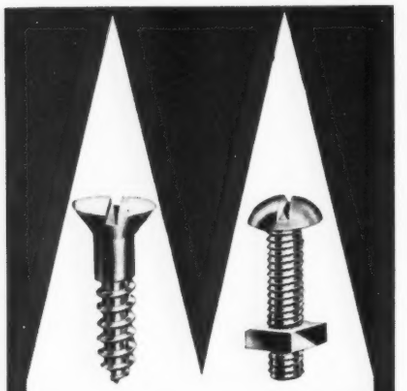


PACKAGING AREA and part of the final assembly department at Herman Miller plant. Package redesign helped save space and maintain orderliness in this area.



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FOR DATA CIRCLE FDM NO. 1212

FDM

UPHOLSTERY TECH
LEONARD S. SIMON

How to Specify Cotton Textiles

The prudent purchase of cotton textiles for use in upholstered furniture and bedding products can result in substantial savings for the manufacturer. And although these so-called "under-cover" fabrics are mostly hidden in the construction, costs are not buried and insignificant; careful buying can add to profits or reduce selling prices.

How can you stretch the dollars in your cotton-textile budget? Simply consult the representatives of cotton textile mills, converters and jobbers. These trained specialists are at your call from coast to coast. Their suggestions and "fabric engineering" may well effect savings in initial cost and application time, while offering, in many instances, a more suitable under-cover fabric for your purpose. Here's a run-down on some essential factors in cotton textile purchasing.

CAMBRIC

Virtually every manufacturer of upholstered furniture is concerned with bottom lining—black cambric in most instances. New and important contributions include black cambric which has been dyed by a special process, and called "Sulphur Fast Black." According to the maker, Sulphur Fast Black cambric is guaranteed color fast to cleaning, washing and perspiration. Black dye will not transfer to the perspired hands of the workmen, they say, thus eliminating a troublesome and annoying problem. Additionally, it is pointed out, black cambric dyed by this special process will not smudge, bleed or crack. Sulphur Fast Black cambric is available through cotton textile converters.

Cambric is offered today in every conceivable width, weight and thread count. According to requirements, it is processed in light-weight goods of 28 x 24 thread count to heavy constructions of 56 x 44 count, and in widths from 23 inches to 60 inches. Finishes proferred are non-friction (non-gloss), friction (gloss or glace), and double friction . . . the cambric with the extra-luxury look. Converters will process cambrics in soft, firm or extra firm textures. And, as in previous years, manufacturers may order cambrics in a wide assortment of colors if the yardage requirements are sufficient to justify a dye lot.

Special cambrics of assorted cotton textile constructions are finding increased usage as "bottom trim." Among these, extra-heavy special cambrics are processed from mill-end goods of heavy fabrics, such as broadcloths. The mill ends are gathered, sorted as to quality, sewn together with narrow flat seams, dyed a rich black, and put up in full-piece bolts or on rolls—to provide an opaque construction which some users prefer to the traditional cambrics. Also adopted as cambric have been the various types of box spring linings. Among these the most popular are the slate grey linings of various weights and widths; back-filled linings in shades of grey and taupe, completely opaque and attractive; and now, with the increased popularity of white upholstery fabrics, some manufacturers have found plain box spring linings, in a natural white color, serving as the perfect bottom lining. Here again, of course, various constructions are available to satisfy preferences and requirements of each manufacturer.

PLATFORM (DECKING) MATERIAL

It is evident that "self-decking" has taken hold as the so-called deluxe touch for upholstered pieces. From the low end to the custom piece, upholstery fabrics are being carried through for use on platforms. But the "old standbys"—cotton textiles—still serve as the platform preference of many manufacturers.

Cotton-goods deckings are of numerous types and constructions. Still reigning as favorites for upholstered pieces are the drills, denims, velour-

ettes (duvteens, headlining, valuret), sateens, and the more expensive velours. And for convertible-action, dual-purpose furniture there is a wide array of narrow and wide duck, quilted soft-goods deckings, and quilted plastic-fabric deckings.

New methods of dye-finishing now allow the processors to present decorator colors in even the least expensive denims. And even though some furniture plants find it expedient to use neutral shades of beige, taupe, rose taupe or grey, it is possible to color-coordinate platforms with covers throughout an entire upholstered furniture line. With such color coordination the "more expensive" look is achieved, adding to the attractiveness of a low-end piece.

Significant to the appearance of a drill or denim construction is the finish. The dull look of the plain or non-friction material may be strikingly enhanced by a comparatively inexpensive calendering process which imparts a subdued gloss finish. Additionally, the calendering "presses" the cotton fibers to add the over-all look of refinement. And for those who prefer a fabric with a high gloss facing, glace or friction finishes are available from all converters.

Any selection of cotton decking material is dependent, of course, on the budget. But in the broad range, from luxurious cotton velours to the lightest in denim, an attractive construction is in the offing.

The smart touch in deckings is achieved through the use of a cotton fabric (denim, drill, sateen) in which the maker's name has been woven in an over-all effect. But this is only practical, albeit effective, for the extremely large volume users. Manufacturing costs would prohibit use of this construction unless a large contract for such goods was offered to the mill.

PULL STRIPS AND FLANGE MATERIAL

Although mill-ends and cotton textile "seconds" have long been popular as pull strips, innovation and ingenuity is changing the picture in an ever-quickening pace. Through the engineering of some converters, manufacturers are being introduced to "manufactured" pull strips which in the long range of usage prove less expensive than irregular "pound" goods. Most notable of modern pull-strips constructions is Osnaburg, a coarse, carded, cotton cloth of plain weave. Osnaburg is comparatively inexpensive, and its tensile strength is excellent. Many weights and widths are offered, but the most popular sizes to emerge for pull-strips usage are the 36", 4.05 yard weight and the 40", 3.65 yard weight, which are the same weight pro-rata. But the outstanding saving through the use of this material results from the "manufactured" put-up. Flat-fold bales of 2000 yards each are converted at the mill to 500 yard rolls. The rolls are then slit or slit and pinked to any desired size or combinations of sizes. Result is a small and compact roll of pull strips. It hangs on a rack, pulls off smoothly, sews evenly, and tacks on the job to provide a pull strip of strength and durability. Although the natural Osnaburg (white) is the most popular, it is also offered in a dyed taupe color according to preference. Manufacturers report marked labor savings through use of this put-up, and they are particularly impressed with the neat, easy-to-use rolls of "instant" pull strips. It's a labor saver, they say, in every class of upholstering. And as a mattress flange material, the slit and pinked 500 yard rolls have been accepted enthusiastically by bedding manufacturers. For those manufacturers who prefer to cut pull strips at their own plants, Osnaburg and various sheeting constructions are available in flat-fold put-up. But it is our opinion that the prepared rolls are more economical because of the small charge for preparation at the mill.

OUTSIDE BACKS

For those manufacturers who use cotton textiles on outside backs, just about all of the above decking constructions are practical and efficient. Colors, widths and weights may be adjusted for use in this area; there is an almost endless selection offered. And the box spring linings—dyed slate greys, backfilled taupes and greys—are becoming increasingly popular because of the low cost and attractive coverage.

SHEETINGS

Technically, sheeting is described as a plain woven cloth made from a single carded or combed yarn. Widths range from a narrow 31 inches to extremely wide widths. Thread count and weight constructions are varied and numerous. For the furniture and bedding industries, sheeting may well be described as the basic cloth. For it is from sheeting that many of our "finished" constructions are processed. But in the greige goods or natural state, sheeting is used extensively throughout the industry.

Two of the important utilizations of sheeting today include the material as a backing for trapunto work (upholstery fabric quilting) and as a backing in the manufacture of quilt-top mattresses. Various widths and weights are available for these purposes.

FOAM RUBBER ADHESIVE STRIPS

Versatile Osnaburg again enters the scene as a textile strip for cementing to foam rubber. But for this purpose, some manufacturers seem to prefer the closer weave of a sheeting. Again, it's a matter of preference, with any desired weight or width available.

DOWNPROOF TICKING

A quality ticking must be designed fundamentally for the specific purpose for which it is intended, and consequently there is a specific weight and construction of ticking for each specific intended application.

A pillow filled with 100 per cent down should have a ticking sufficiently light in weight to enhance the proper breathing and crowning of the pillow, and to assure softness and the advantages of pure down. If a down mixture is used, ticking should be sufficiently heavy so that the sharp and heavy quills of the feathers will not be noticeable. When pure down is used in conjunction with very light weight upholstery fabrics, it is desirable to use an extremely high thread count, light weight ticking. And some manufacturers prefer an extremely heavy ticking despite the quality of the down mixture to avoid any possibility of down or feathers shedding if subjected to hard usage.

And although construction of the fabric, and weight and twist of yarns are essential to the success of downproof ticking, it is extremely important also that ticking has been properly finished. A good finish results in a ticking which has a soft feel, and which allow the cushion to "crown" properly.

BOX SPRING LININGS

Until a few years ago the familiar box spring linings were of the 44 x 36 thread count in both the plain (natural) and dyed grey. Although this construction of lining is still widely used,

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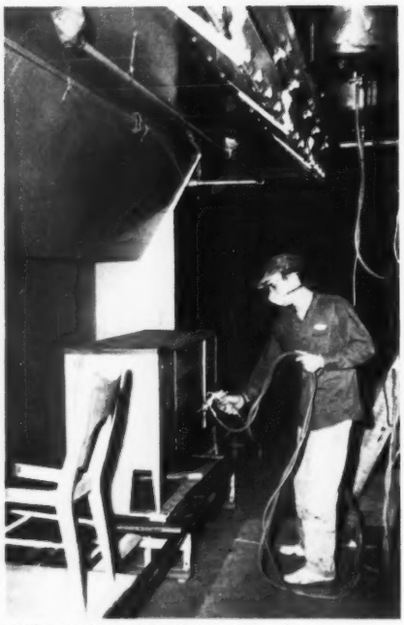
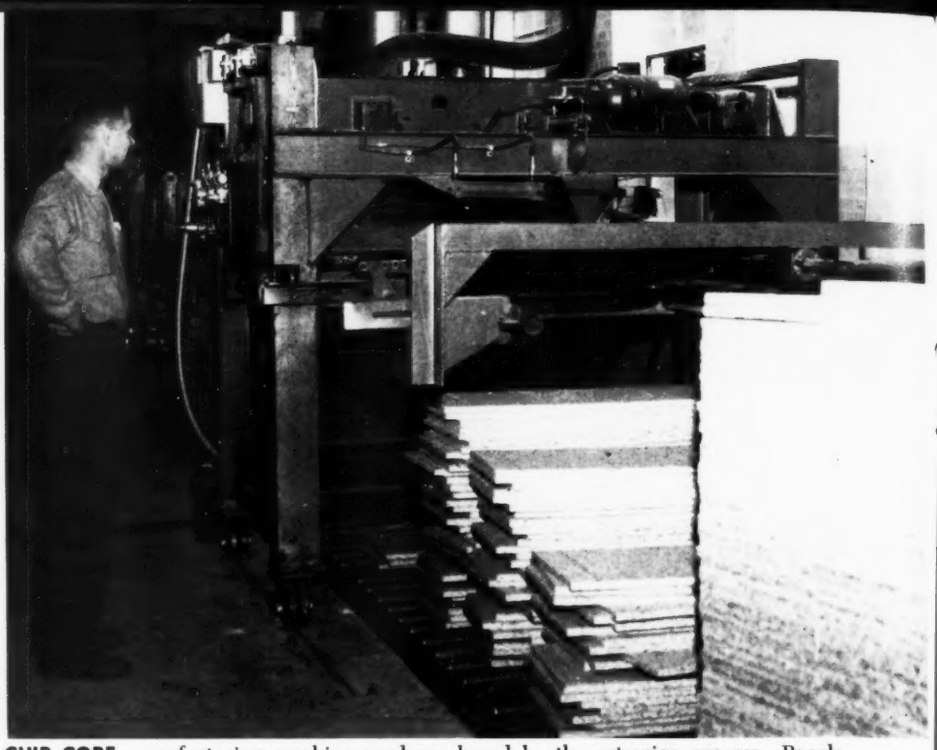
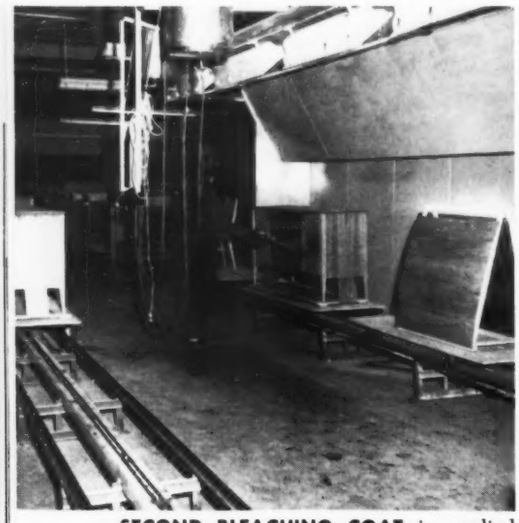


BLEACHING BEGINS with this spraying operation.



CHIP CORE manufacturing machine produces board by the extrusion process. Panels are automatically sawn at this outfeed end.



SECOND BLEACHING COAT is applied at this station.

MODULAR UNITS shown by Broyhill at Summer Market. Enamel finish in black or white and plastic tops are optional. Finish shown is "Danish Walnut."

STANDARD MACHINES such as this Onsrud router, are used at Broyhill.

UPHOLSTERED CHAIRS, below, are from the Premier Division. Left is typical of traditional styling in this line; right is a French Provincial unit.

What's Behind the Growth at Broyhill?

Broyhill Furniture Industries is acknowledged to be one of the industry's giants. How did it get that way?

By CAROLYN KNUEMANN

Broyhill Furniture Industries, Lenoir, North Carolina, is not unlike many conventional furniture manufacturing firms in that it is a family-owned, family-managed company. However, it has not been adverse to going outside the family for key management executives, including top-rung specialists in sales, marketing and production. There is also much evidence that Broyhill has been alert to new equipment, methods and materials.

Today the firm is comprised of eight furniture-manufacturing plants and four subsidiary companies in three divisions—Broyhill Premier, Lenoir House and Broyhill Upholstery.

Six of the firm's plants are located at Lenoir, including: Lenoir Chair Company Plant No. 1, which manufactures upholstered chair frames; Lenoir Chair Company Plant No. 3, upholstering division; Lenoir Chair Company Plant No. 4, lower-priced bedroom furniture; Harper Furniture Company, higher-priced bedroom furniture; Lenoir Furniture Corporation, bedroom and dining room furniture for the Premier Division; and Lenoir Veneer Company which produces rotary cut veneers and plywood.

Other plants are located within a 40-mile radius of Lenoir. They are: Otis L. Broyhill Furniture Company, Marion, manufacturing medium-priced bedroom furniture; Conover Furniture Company, Conover, dining room; United Veneer Company, Conover, making face veneers; Lenoir Chair Company Plant No. 2, Newton, making lower-priced bedroom furniture. Newest addition to the firm is the Lenoir Chair Company Plant No. 5, Taylorsville, completed in 1959 to produce promotionally priced upholstered chairs.

The plants and warehouses together total two million square feet of floor space. Mostly multiple floors, the buildings range from United Veneer, the smallest with 30,000 square feet and 30 employees – to the largest, Lenoir Furniture Corporation, with over 400,000 square feet and 610 employees. The new Taylorsville plant and Lenoir Chair Company Plant No. 2 are one-floor operations.

In diversifying its manufacturing, Broyhill has expanded its line to include upholstered goods, dining room furniture and bedroom suites and offered them in a wide range of price structure, from low-priced goods through medium, medium-high items.

Broyhill's methods of plant expansion are also unique. In some cases, complete new buildings were gradually erected around old structures. Production continued by day, while construction and moving was carried out by night. In many instances, the new was put in before the old was ripped out. At certain times such incongruities would appear as a shiny, newly constructed roof and bright steel beams midst a time-worn, but still operating machine room, subassembly or warehouse. Eventually, the entire installation became renovated or new.

In its present production, Broyhill uses three-fourths million feet of lumber weekly, manufacturing 1,000 three-piece bedroom suites and 200

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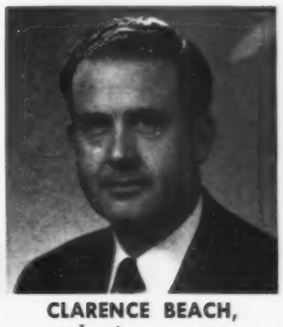
THE LATE T. H. BROYHILL, one of the founders.

J. E. BROYHILL, head of the organization.

PAUL BROYHILL, president of Broyhill.

JAMES BROYHILL, operational director.

WILLIAM E. STEVENS, JR., vice president, sales.



CLARENCE BEACH, production manager.

FDM FUTURE DATES FOR MANAGERS

SUMMER FURNITURE MARKET Los Angeles Home Furnishings Mart Los Angeles, California	**July 17-22**
SUMMER HOMEFURNISHINGS MARKET Dallas Homefurnishings Mart Dallas Trade Mart & Market Hall Dallas, Texas	**July 18-22**
WESTERN SUMMER HOME FURNISHINGS MARKET Western Merchandise Mart San Francisco, California	**July 24-29**
ROCKY MOUNTAIN HOME FURNISHINGS MARKET Denver Coliseum Denver, Colorado	**August 6-8**
SIXTH ANNUAL FLORIDA FURNITURE MART Miami Beach Exhibition Hall Miami Beach, Florida	**August 17-20**
NATIONAL ASSOCIATION OF FURNITURE MANUFACTURERS Sixth Annual Supply, Equipment and Fabric Fair 32nd Annual Convention Conrad Hilton Hotel Chicago, Illinois	**August 27-30**
FALL FURNITURE MARKET Commonwealth Armory Boston, Massachusetts	**September 12-15**
NATIONAL HARDWOOD LUMBER ASSN. 1960 Convention Sherman Hotel Chicago, Illinois	**October 4-6**
HARDWOOD PLYWOOD INSTITUTE Annual Fall Meeting Dinkler Plaza Hotel Atlanta, Georgia	**October 5-7**
FALL FURNITURE MARKET Southern Furniture Exposition Bldg. High Point, North Carolina	**October 22-28**
FALL FURNITURE MARKET Atlanta Merchandise Mart Atlanta, Georgia	**October 31-Nov. 2**

FABRICS & FIBERS
E. O. FRICKER

Testing Assures Fabric Performance

TV has created an interest in the living-room which is unparalleled. This has created a new problem of wear and soiling on upholstered living-room furniture. Fabrics are subjected to more sun. Neither the new, synthetic fibers nor the new, bright modern colors will resist fading as well as those of the past.

A majority of retail sales are made by visual inspection by the consumer, with the quality features, unfortunately, a secondary consideration. Retail customers and furniture stores, as evidenced by numerous requests, are still interested in the following fabric qualities: wear; soiling or cleaning characteristics; resistance to fading and fuzzing; seams holding; resistance to fraying, ravelling, snagging, stretch, wrinkling, and matting in friezes.

Therefore, in 1954 it became necessary to establish a Kroehler upholstery fabric testing laboratory to test all fabrics. The outlay for fabric adjustments and repairs, as well as unhappy customers at that time, ran extremely high in spite of the fact that we used, and still do use, fabrics well above the industry's average in both price and quality. At present, fabric complaints are at an all time low because of this program.

Many times, in the past, the various mills attempted, for the protection of the consumer, to establish construction standards but in a fancy goods industry this proved to be impossible. People are basically interested in the performance a fabric will give, how gracefully it will wear over a period of time, and how long before it must be replaced. Only a combination of good constructions, serviceable yarns and design techniques can accomplish this. Fiber content, alone, is most misleading. Unless the yarns are twisted and blended correctly and then woven in an acceptable manner, the resultant fabric cannot possibly give the required service.

We, in recent years, have had little or no requests for fiber content of fabrics, except for Nylon. A blending of yarn is generally used for design and color requirements, visual effects, softness of texture, etc. The last consideration is usually price. Few buyers of upholstery fabrics, even those employed by manufacturers of furniture, are qualified, or are they able to appraise a fabric as to its wearability, fading, etc. unless they have physical testing equipment. To what advantage is a fiber breakdown on any individual fabric to the consumer?

Even though upholstered furniture has been subjected to more use than ever before, upholstery fabrics are still expected to give good service. The Kroehler Report, a Consumer Motivation Study, pointed out clearly that the retail customer was very conconcerned about: first how long a fabric would wear, and second, how well it could be cleaned. These were two items that were not covered in our Testing Program—only because of the difficulty in establishing equitable tests. However, after considerable research we finally established our Performance Tested Fabric Program in January of 1959.

The tests were developed because an increasing number of lower priced and minimum standard fabrics of all descriptions being offered for sale. Many times the designers of these fabrics, and the producers, in the heat of competitive pricing and styling, were not aware of the minimum service these fabrics would give. In order to protect the consumer we felt it desirable to give our customers the opportunity to know which are the better performing fabrics. Wear test standards have been developed which, we feel, will assure the consumer acceptable and reasonable service. Standards to insure that the upholstery may be cleaned without injurious results under normal cleaning methods have been developed by Service Master, Inc., the world's larg-

est home care organization, in conjunction with the Kroehler Mfg. Co.

"Performance Tested Fabrics" must pass the following tests:

1. Fabric must be adequately constructed to insure sufficient strength when sewn so as to eliminate seam slippage.
2. Tear strength must be sufficient to eliminate tearing of the fabric under more than normal use.
3. Fabrics must be dyed so as to eliminate wet crocking, color transference from upholstery fabrics to wet clothing.
4. Breaking strength test eliminates the bursting of fabric on cushions or backs under subjection to repeated weight or pressure.
5. The fuzzing test assures continued good appearance with minimum of fuzzing or pilling.
6. Wear testing on a Wyzenbeek & Staff abrasion machine assures more than adequate wear under normal conditions.
7. Tests for cleanability as established by Service Master, Inc. assures that the fabric may be cleaned without dye transference, water spotting and shrinkage, the three important factors encountered in dry cleaning or shampooing of upholstery fabric.

The wear test and cleanability standards are the backbone of our Performance Tested Fabric program since these are the ones in which Mrs. Customer is vitally interested.

In order to clarify a few questions that may come to your mind, the following are some examples *NOT* covered under this program.

1. Snagging or pulling of surface yarns does not denote wear, but misuse.
2. The matting or shading of surface yarns is a normal reaction of fibers when subjected to pressure, heat and moisture and does not necessarily denote wear or low quality. It is the characteristic of many types of friezes and velvets.
3. The parting of pile fibers in friezes, barring the welts, does, not denote wear.
4. Cleanability tests do not guarantee that stains, spots or soil can be removed from a fabric but does assure the consumer that the fabric will not change, appreciably, if cleaned by professionally approved methods.

Due to the need for certain types of higher styled fabrics, as well as the necessity of having lower priced promotional numbers, there will be some fabrics, particularly flat fabrics, that will not come up to our standards for wear and/or cleaning. Some fabrics may pass all tests but one, or possibly two, and are well above the average in quality but still do not carry the seal of "Performance Tested Fabrics."

Most of the charactertistics of an upholstery depends on two things: the weave and the yarns used.

Basically there are just two types of weaves: Flat and Pile.

Let us consider a flat fabric versus a pile fabric of equal quality—that is—the same closeness of weave; the same quality of yarns and dyes being equal. As far as wear is concerned it is only necessary to wear through the side of a flat fabric, whereas, in a pile fabric the wear comes down the length of the yarns and will, therefore, wear much longer.

Let us suppose something is spilled on a flat and a pile fabric. The grease or dirt is rubbed into and also absorbed directly by the yarns of a flat fabric. It is difficult and sometimes impossible to clean flat upholsteries when on furniture. It is simple enough if the fabric could be sent out to be dry cleaned, but this, of course, is not possible. Therefore, many times the cleaning, particularly in light colors, leaves spots and streaks and explains why professional help should be used.

In pile fabrics the dirt is held in suspension and not permitted to be ground into the yarns. Vacuuming removes much of the soil and it is considerably easier to clean a pile fabric as the cleaning solutions can be worked around the entire fiber rather than only one side.

Now let us consider fading. When light rays hit a flat fabric they are concentrated directly in one place whereas in pile fabric the light rays are dispersed. For this reason a pile fabric generally will fade less than a flat fabric.

Now let us consider the yarns generally used in upholstery fabrics. There are only a few used in volume. These are Nylon, Rayon, Cotton and Acetate. Nylon wears the best, soils the least, cleans the easiest and holds its dyes as well as any. A viscose rayon would be second in each category, cotton third, and acetate last. ■

SWAGING is fast . . . up to 6 per minute with manual feed. **Swaging is economical . . .** requires comparatively low capital investment. **Swaging is easy . . .** skilled labor not required. **Swaging saves both metal and money.** Plenty of it! Work leaves machine with **fine finish.** Fenn Precision Long Die Swaging Machines are made in two sizes. Model 4½F will taper 15" in length of tubing up to 2¼" diameter. Model 3½F will taper 10" in length up to 1¾" diameter. Write for Swaging Catalog, The Fenn Manufacturing Company, Fenn Road, Newington, Connecticut.

FENN

LONG DIE

Swaging Machines

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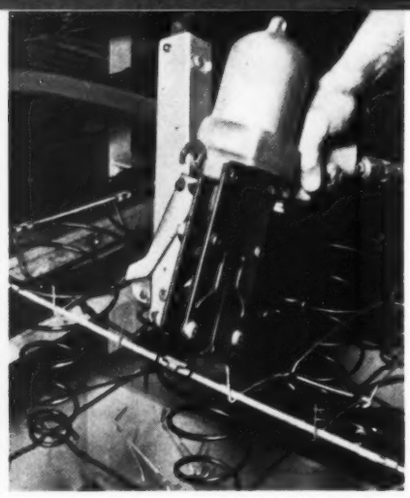

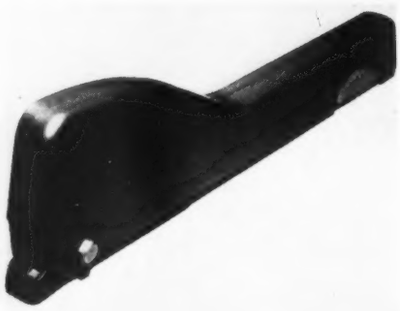

COST, PRODUCTION

By CAROLE NADWIDNEY
Assistant Editor

The Cost and Production Sessions, to be held during the NAFM Sixth Annual Supply, Equipment and Fabric Fair and 32nd Annual Convention, are planned and designed to benefit you, whether you are in top management, production management, design, or a technical specialist responsible for cost, product engineering or production. The sessions, under the direction of experts in the field, will cover such subjects as:

—Which glue will meet your production requirements?

—Kiln-drying and/or fan-air drying of lumber; how can these methods cut costs for you?

—"Finishield"—a cigarette-proof wood finish and how it works. Learn how you can adapt this finishing technique to your product.

—Upholstery fabric testing and quality standards—what are the newest developments in the field?

—Cushioning materials—what type is best suited for your product;

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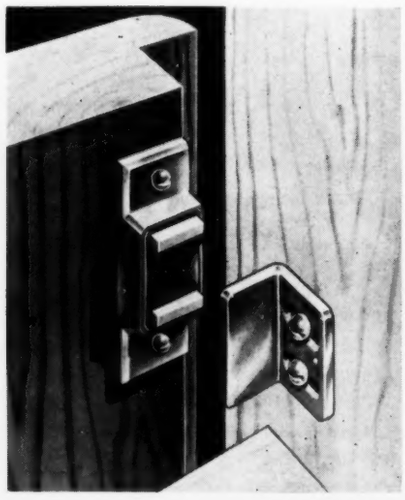


Top to bottom—

CLIP APPLICATOR, for spring assembly, will be demonstrated by Paslode Company.

STAPLING HAMMER, large capacity, for heavy-type staples, will be featured by Vail Mfg. Co.

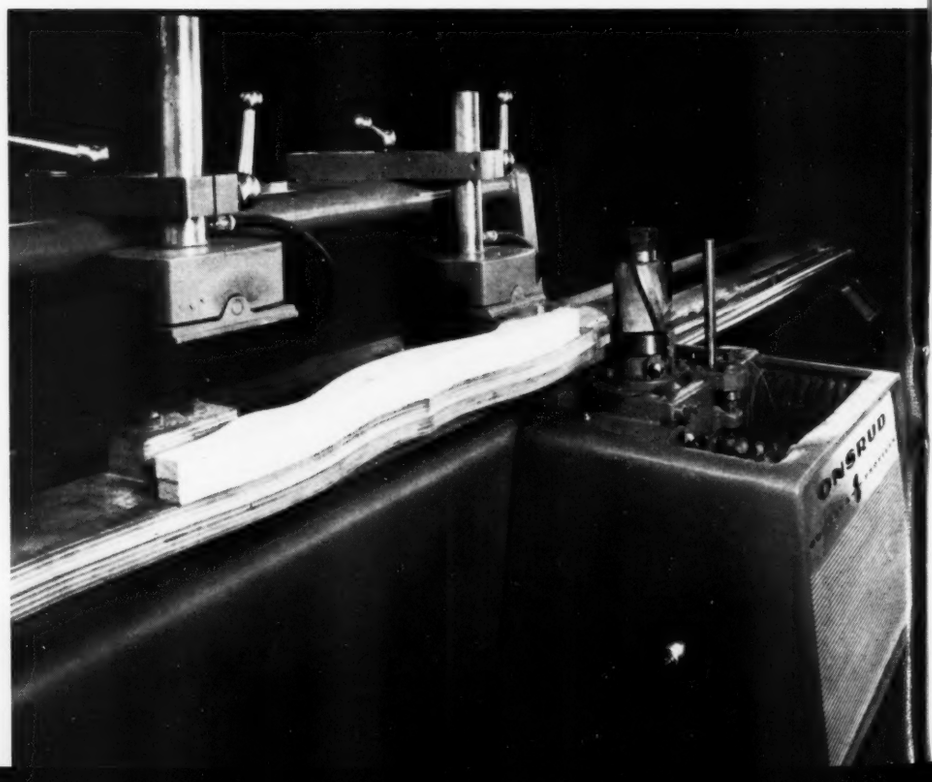
AIR TACKER, said to be smallest with complete air return, will be shown by Senco Products Inc.

Right, clockwise—

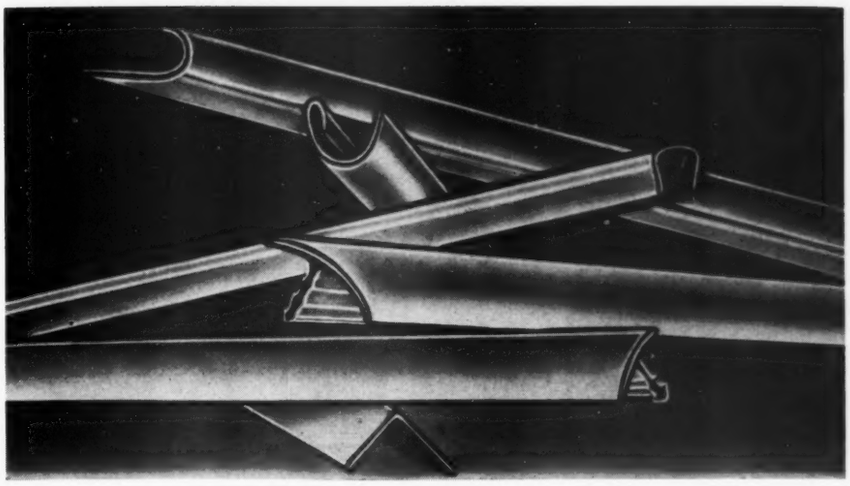
URETHANE FOAM, by Nopco Chemical Co., features compressions for variety of seating.

MAGNETIC CATCH with plastic case, from Engineered Products Co., has self-aligning lifetime magnet.

CONTOUR-PROFILER, Onsrud Machine Works' automated machine, will be featured.



N TO HIGHLIGHT NAFM FAIR



FACTS ABOUT THE FAIR

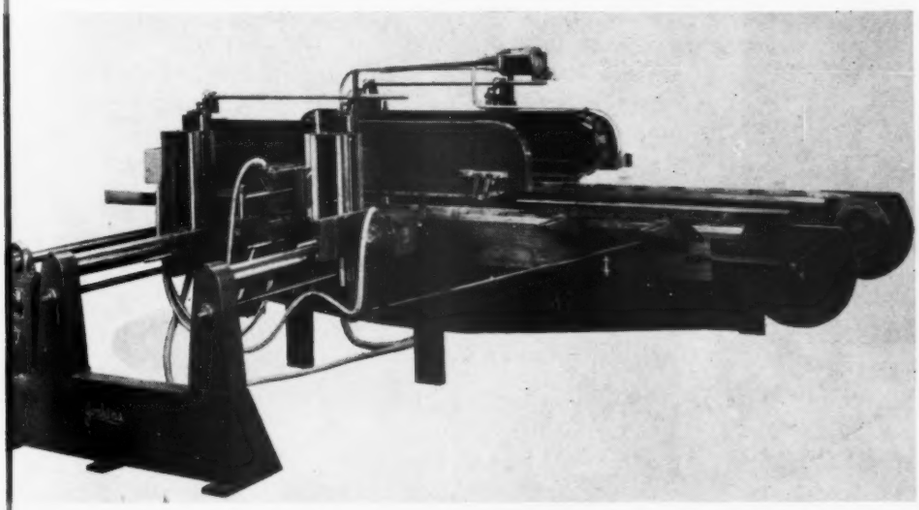
DATE: August 27-30, 1960

PLACE: Conrad Hilton Hotel

CITY: Chicago, Ill.

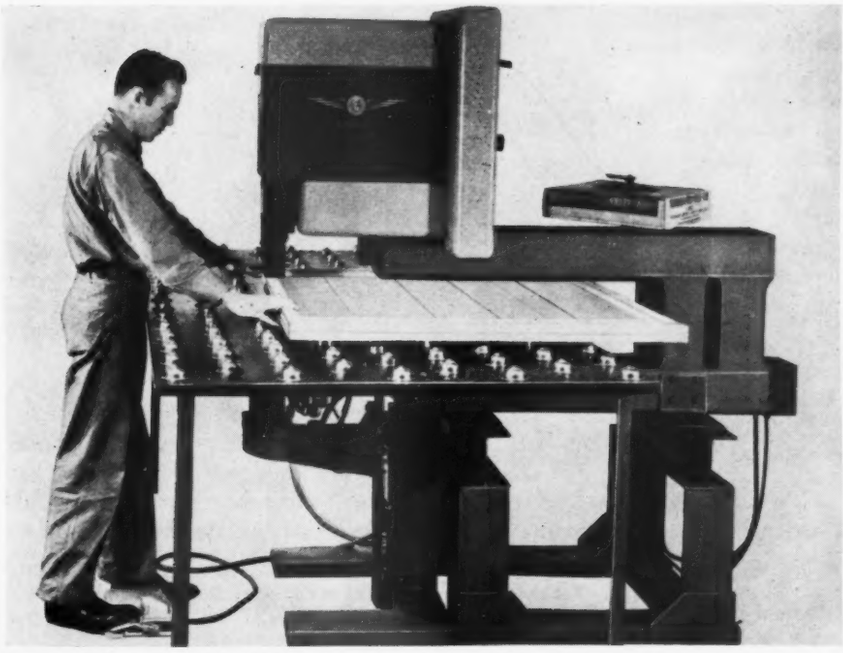
EXHIBITORS: Over 100 leading suppliers

SPONSOR: National Association of Furniture Manufacturers



Above—

STRATAPANEL system for plastic drawers, will be shown by Robert A. Schless & Co., Inc.



Left, top to bottom—

SILVATRIM, metallic plastic mouldings, manufactured by Glass Laboratories, Inc.

DOUBLE-END TENONER, will be demonstrated in a scale model, by Kohler-Joa Corporation.

AUTO-NAILER, which drives 145 nails per minute, will be demonstrated by Auto-Nailer Co.

FDM IT'S NEW

- Materials
- Equipment
- Supplies
- Components
- Literature

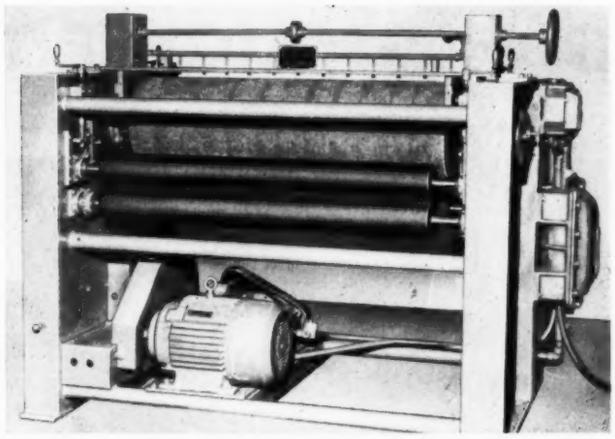
For more information on items listed in the IT'S NEW Columns use the handy Reader Service Card opposite pages 18 and 34. Complete details on these items will be sent to you by the manufacturer.

Panels Laminated With Sliced Hardwood Veneers

Veneered Versaflake, in a selection of sliced hardwood species, has been introduced to the furniture manufacturing, fixture and cabinet industries by the Silvatek Division of the Weyerhaeuser Company. The material is laminated on both sides, sanded, trimmed and furnished in a variety of veneer grades, face and back, in both standard and counter-front grain direction. Available veneers include birch, cherry, Philippine mahogany, red and white oak, walnut and Celtes, in ¾ in. thickness and in standard panel sizes. The material is claimed to machine easily and consistently in high speed production, rout cleanly and mortise without splintering. Panels can be grooved, dovetailed, rabbeted and tenoned, allowing for flexibility in design and assembly. The core stock of the wood veneerd laminate is standard Versaflake wood flake board, said to have excellent workability with a smooth, grainless surface. A.S.T.M. test procedures rate the ¾ in. Versaflake as having a controlled density averaging 40 lbs. per cubic foot, an internal bond of 90 lbs. p.s.i., an M.O.R. of 3,200 p.s.i., surface screw holding capacity at 250 lbs., and two-hour water absorbency at 10 percent.

For More Information Circle Reader Service Number 470

New Machine Sands Most Materials



A new sanding machine employing the recently developed impregnated nylon sanding wheel has been introduced by the Union Tool Corp. The "Uni-Finisher" will apply a light abrasive action to wood, plywood, hardboard, metal or plastic from 6-50″ wide, 0-4″ thick, at speeds up to 60 lineal feet per minute. The machine is ideal for sanding finish in the white, sealer and filler coat sanding, and polish sanding in pre-finish lines or in an automatic conveyorized system. Varied sanding wheels are available up to 20″ diameter. Furnished with dust hood and choice of powered feed and off-bearing rolls, or endless belt feed.

For More Information Circle Reader Service Number 471

Wood Components Are Self-Lubricating

A complete line of self-lubricating, non-contaminating components with low friction and silent operation is available from Lignum-Vitae Products Corp. Made of a resinous wood said to be the hardest, heaviest and closest grained in the world, capable of withstanding great pressures, the components include wheels, pulleys, rollers, bearings, bushings and guides.

For More Information Circle Reader Service Number 472

TO PAGE 32

A *Victor* CLINCHED NUT PLATE FOR 2¢? UNBELIEVABLE . . . BUT HERE IT IS!

At last Victor has found a way to give you a plate with a standard 5/16" clinched nut and the full quarter inch of machine thread gripping power and strength you've come to expect from Victor plates. Yet, amazingly enough, Victor has been able to reduce the quantity price to only 2c through the use of an exclusive new "Lucky Clover Leaf" embossed design and a newly engineered method of attaching the nut, itself.

BELIEVE IT OR NOT YOU'RE LOOKING AT A

2c (TWO CENT) 2c

Victor CLINCHED NUT PLATE

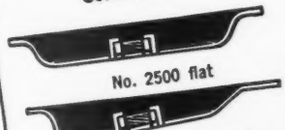
with full machined 5/16" nut

CLOVERLEAF EMBOSSING FOR STRENGTH so you can use this money saving plate for all but the heaviest upholstered furniture. Newly engineered nut attachment is stronger than ever.

AMERICAN-MADE QUALITY AND SERVICE. You can still save with our "import" prices without sacrificing Victor's established advantages in quality and service.

3000 plates or more	2c ea.
bags of 1000 plates	2½c ea.

less 5% discount for orders of 25,000 pieces or more



PAT. PENDING

Victor SUPPLY COMPANY "We lead, others follow."

1514 WEALTHY ST., S.E.
GRAND RAPIDS 6, MICH.
PHONE GL 6-1335

FOR DATA CIRCLE FDM NO. 1218

LOWER YOUR COSTS SILVATRIM RAISE PRODUCTION

WITH Silvatrim® PLASTIC
BRASS / CHROME / COPPER } METALLIC FURNITURE MOULDINGS

- Looks like metal—only a fraction of the cost of metal mouldings!
- Actually pays for itself in production savings alone!
- Highly flexible—easy to form—easy to apply!
- Eliminates expensive metal formings and complicated assemblies!
- Form-fits to any edge, rout line or surface!
- No waste—available in specific lengths or continuous coils!
- Never tarnishes, never fades, never needs polishing!
- Permanent metallic finish, sealed in for a lifetime!
- Durable, lightweight, corrosion-resistant!
- SILVATRIM® stands up best where other mouldings fail!

There are many stock cross-sections on hand for immediate delivery or special designs can be created to meet your specific needs!

Write for samples and instructions on how easily SILVATRIM® can be applied.

GLASS LABORATORIES, INC., 863—65th Street, Brooklyn 20, N. Y. Dept. M7

FOR DATA CIRCLE FDM NO. 1199

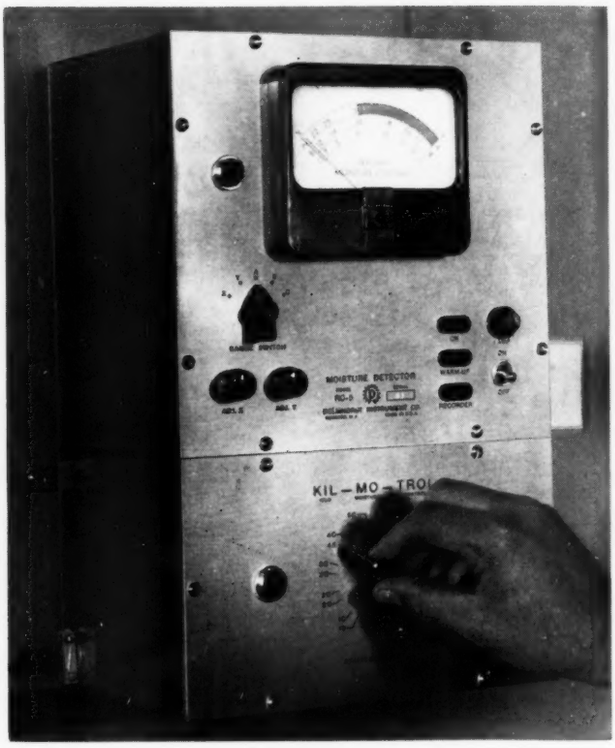
EARLY AMERICAN
legs by VICTOR set the pace in Authenticity, Quality and Value.

Length	6"	8"	10"	12"	14"
5000 or more	17¢ ea.	21¢ ea.	25¢ ea.	29¢ ea.	33¢ ea.
1000 or more	18¢ ea.	22¢ ea.	26¢ ea.	30¢ ea.	34¢ ea.
100 to 1000	19¢ ea.	23¢ ea.	27¢ ea.	31¢ ea.	35¢ ea.

Turned from fine northern hardwoods with 1⅜" top diameter and 5/16" hanger bolt. Choice in walnut, fruitwood or maple finish. ⅝" polished glide.

Victor WOOD PRODUCTS CO.
Grand Rapids, Michigan
1514 Wealthy St. S.E.
Phone GL 4-8224
"We lead, others follow"

FOR DATA CIRCLE FDM NO. 1216

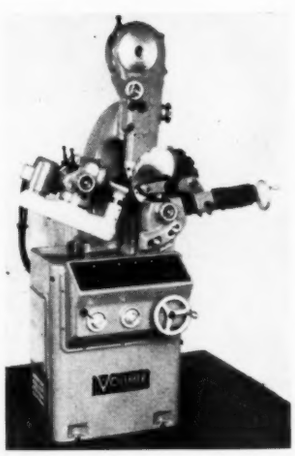


Electrical System Reads Lumber Moisture Content

An electrical system easily installed in any dry kiln to measure moisture content of lumber while it is drying, and without a kiln shutdown, has been announced by Delmhorst Instrument Co. "Kil-Mo-Trol" measures the moisture content of lumber that is to be used in actual production, not sample boards. Readings are indicated on a Moisture Detector located in the kiln control room. Both shell and core moisture content readings can be made in moments according to the manufacturer, without the unpleasant task of entering a hot kiln. A day's drying time is thereby saved, because the user knows exactly when lumber is dried below fibre saturation point, and the temperature can be raised without the danger of honeycombing. The system indicates when lumber dries fast or slow, and reveals faults such as excessive or inadequate radiation, clogged traps, faulty baffling and burned out motors.

For More Information Circle Reader Service Number 473

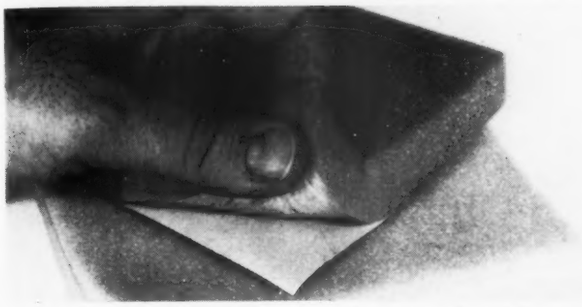
Saw Grinder



An automatic grinding machine for carbide tipped circular saws, imported and distributed by W. Von Arnauld Co., is said to cut grinding time by ⅓ to ½. The Vollmer ASHK-1000 comes in two models, A for resharpening blades, and B, for making them. Both can grind saws from five to 40 inches diameter and any kind of tooth or cutting edge.

For More Information Circle Reader Service Number 474

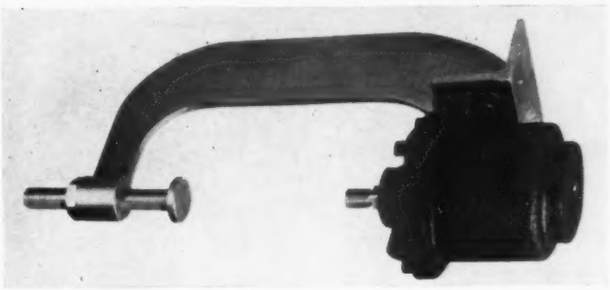
Self-Adhesive Polyurethane



A self-adhesive polyurethane foam in sheet form, developed by Morgan Adhesives Co., is claimed to bond itself to either porous or smooth surfaces. It is available in sizes from ⅛ in. to 4 in. in thickness, and is said to be ideal for cushioning, padding or packaging. It has an elastic property of 30% strength in length and 5% in width. An easily removed paper backing covers the adhesive.

For More Information Circle Reader Service Number 475

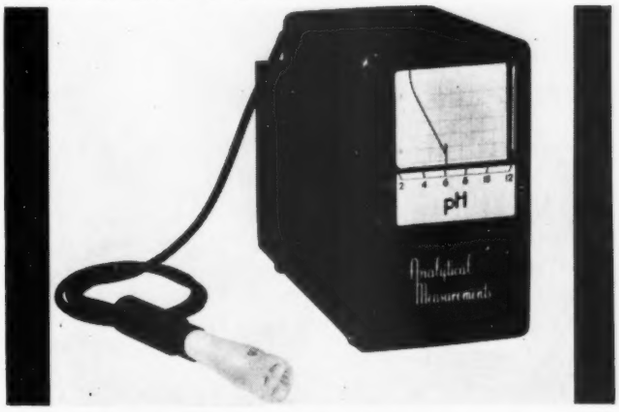
Air-Powered "C" Clamps



Air-powered "C" clamps offered by Airmatic Valve, Inc., are available in two series; heavy-duty for exceptional strength and durability, or economy for average use. Available with manual sleeve valve or integral solenoid valve (for automation), various power factors and optional clamping ends. The model shown has an 0-6" opening, 3¼" depth, and 7:1 power factor.

For More Information Circle Reader Service Number 476

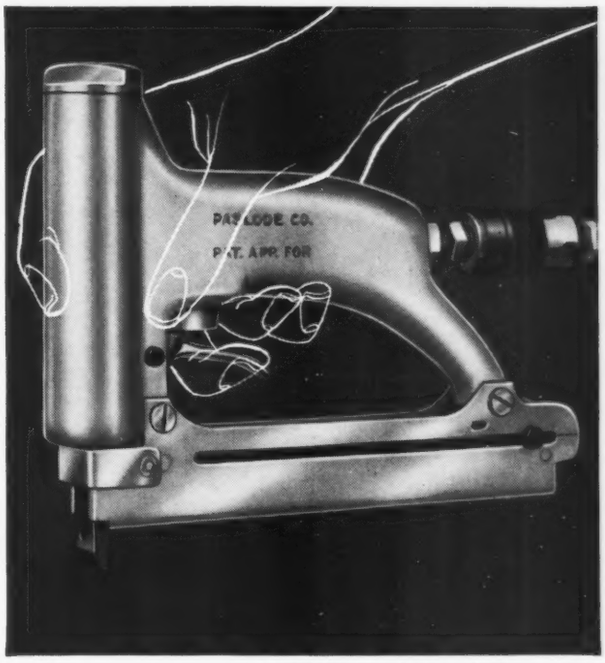
Recording pH Meter



A combined pH meter and strip chart recorder, which utilizes an electronically modulated amplifier and standard radio tubes, has been designed by Analytical Measurements, Inc. The strip chart recorder contains a 63 ft. roll of pressure sensitive coated chart paper. Chart drive may be disconnected for an indicating pH meter.

For More Information Circle Reader Service Number 477

TO PAGE 34



Model PR 33 & 35 (standard crown)
Model PR 33W & 35W (wide crown)

PASLODE'S *new...compact*
"PR BANTAM" Air Power Stapler

All the speed and drive of the larger Paslode PR's are now contained in this newest and most maneuverable of pneumatic staplers.

The Bantam is shorter in height by ⅜ths of an inch and lighter by ½ to ¾ths of a pound than its larger PR brother. It is well-balanced, hand-fitting, almost effortless to handle...can be used all day with a minimum of fatigue by men or women.

It contains the Paslode high-speed nylon piston for fast, recoilless action and improved work quality. A light touch of the trigger drives the staple home from any angle.

Costly downtime and production line delays are greatly reduced with the jet-drive air return which eliminates parts failures, extends the life of the tool, and assures positive action and quality stapling.

The new Bantam takes both standard and wide crown staples, with leg lengths of 3/16", ¼", and ⅜".

For further information about this new tool, write today and let us arrange a free demonstration on the job.

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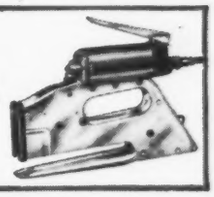
Division of Signode Steel Strapping Company
5860 Northwest Highway, Dept. FD, Chicago 31, Ill.

There's a Paslode hand or pneumatic stapler to help cut the cost of almost every kind of stapling.

SH Series
Stapling Hammers

Model
A-STA 25
Pneumatic
Stapling
Pliers



FOR DATA CIRCLE FDM NO. 1206

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FAST BLACK
the finest BLACK money can buy
FULLY GUARANTEED

COLOR FAST TO
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PROOF AGAINST
- smudging
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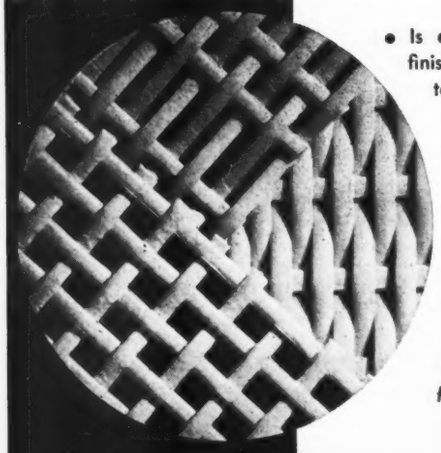
North Dighton, Mass. • VAndyke 4-6961

FOR DATA CIRCLE **FDM** NO. 1200

FIBRO-KANE WEBBING



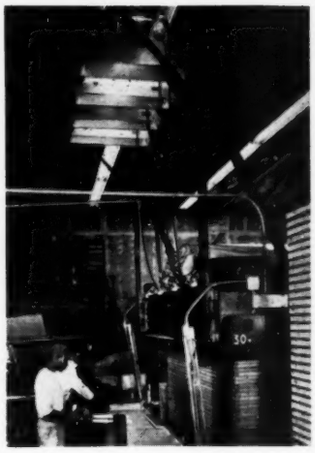
- Has the attractive variegated appearance of natural cane.
- Is much lower in cost, permitting its use in many applications where natural cane has proved too expensive in the past.
- Is easy to apply and finish—can be stained to harmonize with various woods.
- Does not become brittle with age. No undesirable loose "hairs" or splinters.

Samples and full particulars on request.

E. W. TWITCHELL, Inc.
3rd and SOMERSET STS., PHILADELPHIA 33, PA.

FOR DATA CIRCLE **FDM** NO. 1215

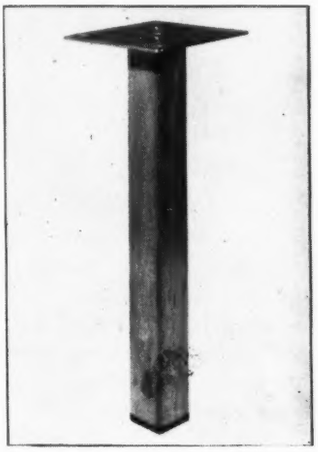
Multiple Shadow Marker



A mounting fixture for multiple installation of up to six Guide Line Lights to cast up to 48 marking shadows for one machining or assembly operation has been announced by Carter Products Co., Inc. Sliding brackets and baffle plates for each light adjust shadow lines to various operations and prevent projected patterns from overlapping or interfering with adjacent lights.

For More Information Circle Reader Service Number 478

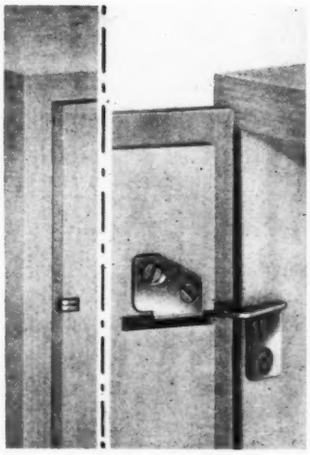
Veneer-On-Steel Legs



The beauty of wood and the sturdiness and durability of steel are combined in a new leg by Trend Industries. Made of heavy gage tubular steel with wood veneers permanently applied, according to the maker, they are available in six to 16" sizes, in a variety of woods. They are not stocked, but made to special order in quantities of 4,000 or more.

For More Information Circle Reader Service Number 479

Cabinet Door Hinge



A patented cabinet door hinge for 3/8 in. lipped doors has been developed by National Lock Co. Styled so that only a small part of the hinge tip is exposed, it mounts flush with the front of the cabinet. Made of steel, the hinge is available in either Bright Chrome or Old Copper finish and is designed to harmonize with any style of hardware decor.

For More Information Circle Reader Service Number 480

FOR MORE INFORMATION

ON

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Circle the numbers of the appropriate item or advertisement, tear out and mail this postage free card.

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Please send me further information about the items circled below:

EDITORIAL ITEMS: J-140 J-141

IT'S NEW: (Materials, Supplies, Equipment, Components, New Literature)

469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484
485 486 487 488 489 490 491 492 493 494 495

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FOR MORE INFORMATION
ON
EDITORIAL—IT'S NEW—
ADVERTISED PRODUCTS,

Circle the numbers of the appropriate item or advertisement, tear out and mail this postage free card.

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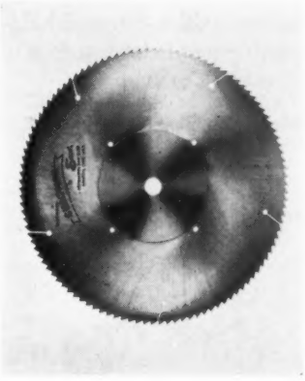
is at your service. Write us if you would like more information about any source of supply.

Vapor Action Conditioners

A line of vapor action conditioners for protection of spray guns and brushes is available from Wisconsin Laboratories, Inc. The "Protexem Junior" model slips over the nozzle of spray guns while a flexible adapter makes a tight seal around the nozzle. The miniature conditioner is said to be ideal for jobs where frequent interruptions occur. It uses Protexem Vapor Solvent, said to offer lower toxicity and a safer flash point (70 F.).

For More Information Circle Reader Service Number 481

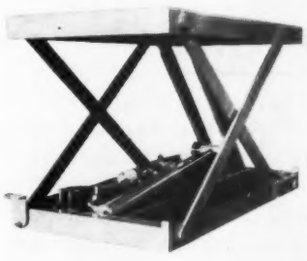
Smooth Cutting Saw



A low-cost, quality metal cutting saw is available in most sizes from the Heineman Saw Corp. Teeth are formed for fast chip removal and free cutting. Four vacuum lubrication holes are designed to reuse the mist created by the cutting, providing added blade life, according to the maker, because of the smoother cutting.

For More Information Circle Reader Service Number 482

Heavy Duty Lift

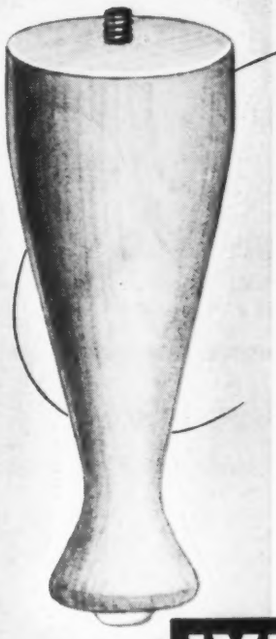


A scissor lift actuated by a foot switch has been introduced by A. M. Kvalheim Machinery Co. The model 1030 shown has a 3 by 6-foot table which can be raised from 9″ to 40″. A 1-HP pump motor is used in conjunction with a heavy duty cylinder. Load capacity is 4,000 pounds, with a good safety factor, according to the manufacturer.

For More Information Circle Reader Service Number 483

add the beauty of

Genuine Hardwood Legs



manufactured to any specifications for

Furniture OF *Distinction*

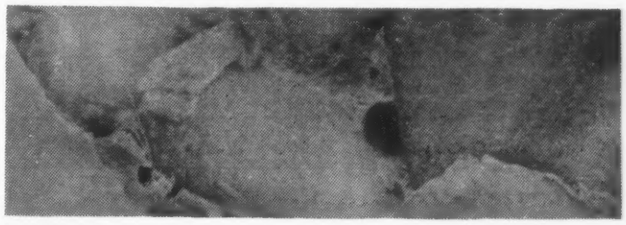
A finishing touch of quality for the finest furniture! Legs especially created to accentuate the styling of your smartest lines... exactingly manufactured to your specifications. Write for samples in the finest hardwood to meet your quality requirements.

Send your Specifications for estimate, without obligation

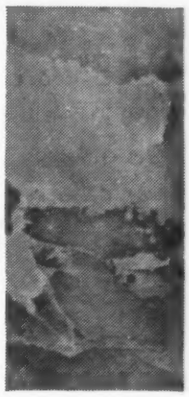
IXL MANUFACTURING CO.
BERNIE, MISSOURI

"YOU NAME IT...IXL MAKES IT."

FOR DATA CIRCLE FDM NO. 1201



Leading Furniture Manufacturers use the Elegance of **WALKER & ZANGER** *MARBLE to Increase Sales...*



Over 400 types of marble from all over the world.

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California — 3360 Glendale Blvd., Los Angeles 39, California.
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NEW STYLE 34 SWIV-L-GLIDE

- Newly designed plastic base.
- Special high luster finish.
- Extra value at low cost.
- State quantity and size.
- Samples on request.

Arrowhead Associates

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"Your furniture sells and moves buyers to buy when shown in full Natural Color Postcards, also as a retail sales aid. *Write for samples and prices.*"

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FOR DATA CIRCLE FDM NO. 1214

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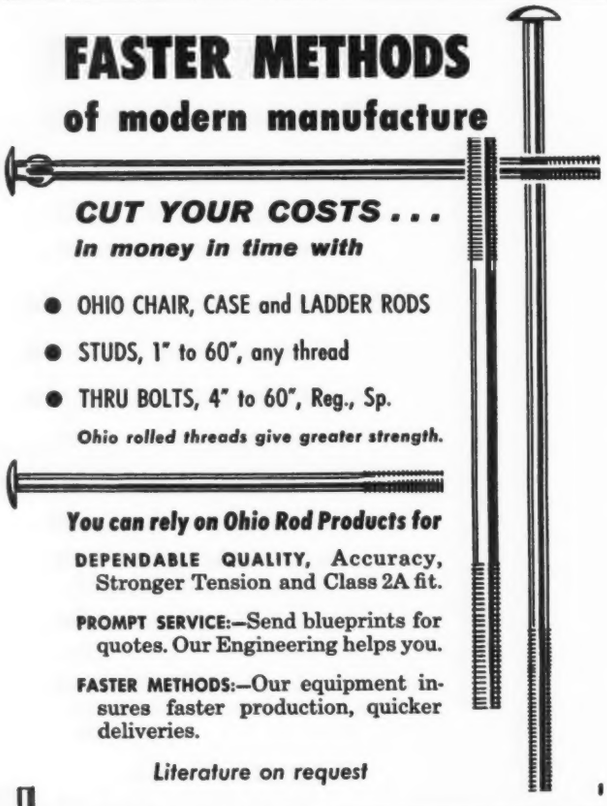

CUT YOUR COSTS . . . *In money in time with*

- OHIO CHAIR, CASE and LADDER RODS
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You can rely on Ohio Rod Products for

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PROMPT SERVICE:—Send blueprints for quotes. Our Engineering helps you.

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Literature on request

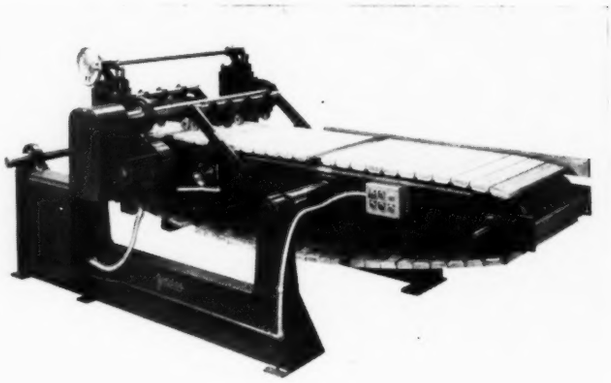
OHIO ROD PRODUCTS CO., INC.

20252 1st AVENUE • BEREA, OHIO

FOR DATA CIRCLE FDM NO. 1205

IT'S NEW/FROM PAGE 35

New Slat Bed For Smaller Manufacturer



A slat bed multiple cutup machine has been designed for small-to-medium woodworking operations by the Kohler-Joa Corp. The Jenkins 140 Series is available in bed widths up to 96" and lengths to 72" before hold-downs; it uses the heavy-duty Oilomatic piston-type solid-block chain, with half-round laminated plastic bearings under every link running in half-round bearing bronze tracks. The machine can carry up to 20 HP on the dado shaft, has individually spring-loaded rubber-covered hold-down wheels mounted on adjustable parallelogram frame, aluminum backing bars behind every slat.

For More Information Circle Reader Service Number 484

High-Styled Bed Legs

A line of deluxe, high-styled box spring legs has been designed to meet the demand for quality legs, according to Victor Wood Products Co. Available styles include Queen Anne, Octagonal and Danish. The finishes are black, blonde, walnut, mahogany, Danish, saddle, antique white, and black or white with a gold veiling.

For More Information Circle Reader Service Number 486

NEW LITERATURE

'TEXTOLITE' PLASTIC LAMINATES are illustrated in a four-color, 12-page brochure published by General Electric. A detailed breakdown of commercial, institutional and residential applications is presented in chart form, and fabrication techniques are told for counter top, wall and door surfacing. There is also a comparison chart of costs, characteristics and limitations of Textolite and other common surfacing materials.

For More Information Circle Reader Service Number 485

BRAKE AND CLUTCH CONTROLS are detailed in an eight-page Electric Controls brochure issued by the Warner Electric Brake & Clutch Co. The firm's line of standard, special and custom controls used to actuate Warner electric brakes and clutches are covered in sections on description, operation, dimensions and selection.

For More Information Circle Reader Service Number 487

MACHINE-GRADE NAILS in a variety of styles and sizes are described in a brochure published by the United Shoe Machinery Corp. "Powasert" nails are available with eight different heads, six shanks and four points. There are also a variety of pallet nails, common, box and specialty nails. Crutchfield's.

For More Information Circle Reader Service Number 488

'POP' RIVETS for use where there is access to work on only one side are described in a comprehensive, eight-page illustrated color catalog. Detailed information was compiled over the past five years by the "Pop" Rivet Division of United Shoe Machinery Corp., for industries seeking faster and simpler means of assembling metal to metal, plastics, rubber and fabric, and other for other combinations. Two basic types of the blind rivet are described, as well as a variety of tools for application.

For More Information Circle Reader Service Number 489

RUBBER TIRES for band saws and sander pulleys are among products listed in two brochures published by the Broadway Rubber Corp. One booklet lists tires, rubber mallets, feet for metal furniture, tack and screw bumpers; the other covers rubber hold-down blocks and assorted parts for various makes of drum sanders.

For More Information Circle Reader Service Number 490

STRAIGHT KNIFE CLOTH CUTTING machines by H. Maimin & Co., Inc., are described in a two-color brochure. Features include a new 100% automatic sharpener that can be triggered to grind the knife in two seconds. Another lever provides a selection of two edges, rough or smooth. Motors are said to start instantly at full speed and power.

For More Information Circle Reader Service Number 491

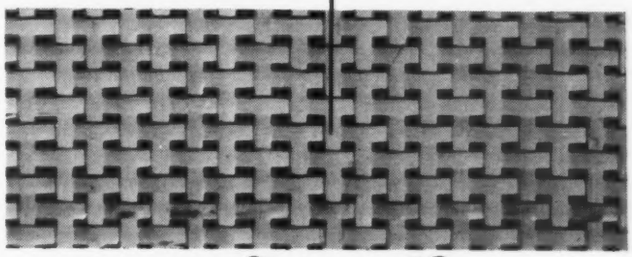
FIRE-RETARDANT PAINT and its uses are described in a 12-page illustrated bulletin, "Paint Your Way to Fire Safety," published by the Albi Manufacturing Co., Inc. Comparative costs and flame-spread ratings of Underwriters' Laboratories are covered as well as the "vital safety margin" acknowledged by insurance and safety authorities to be a key factor in minimizing fire loss.

For More Information Circle Reader Service Number 492

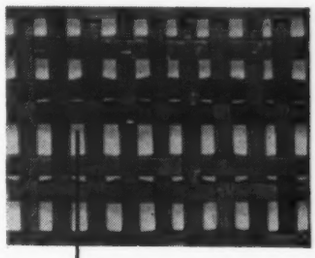
RUBBER LATEX FOAM STANDARDS set up by the B. F. Goodrich Co. in the production of its "Texfoam" mattress cores, are published in a technical report, Form 222. Factors such as hygiene, compression, posture-zone support, odor resistance, firmness, weight, durability, breathability, washability and color are covered.

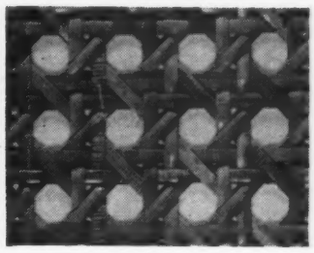
For More Information Circle Reader Service Number 493

Genuine CANE
DOMESTIC & IMPORTED
by A.R.& R.



for that "Touch of Elegance"





other designs available

AMERICAN RATTAN & REED MFG. CO.
Division of Janson Industries, Inc.
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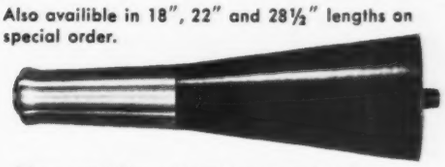
FOR DATA CIRCLE FDM NO. 1185

Fashion Flared Legs

Victor leads again with new, new styling at low, low prices . . .

1⅞" TD, ⅞" BD with ¾" Brass Plated Glide								
Length	6"	7"	8"	9"	10"	12"	14"	16"
1000 or more	.32 ea.	.34 ea.	.36 ea.	.38 ea.	.40 ea.	.44 ea.	.48 ea.	.52 ea.
100 to 1000	.34 ea.	.36 ea.	.38 ea.	.40 ea.	.42 ea.	.46 ea.	.50 ea.	.54 ea.

Also availible in 18", 22" and 28½" lengths on special order.



New, solid brass "Fashion Flared" ferrules are used to accent the finishes; choice of blonde, ebony, walnut or mahogany. Kiln dried Northern hardwoods.

Attach with our patented Clinch Nut Plates.

#7 sq. flat 4c ea. #7A sq. 10° 4c ea.
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#15 tri. 15° 6c ea.

Victor WOOD PRODUCTS CO.
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Phone GL 4-8224 "We lead, others follow"

FOR DATA CIRCLE FDM NO. 1217

Furniture Engineering

A technical section for managers, department heads and technicians responsible for production, planning, cost analysis and research, in the furniture manufacturing, upholstery and bedding industries.

Advance technical report—

Automation Comes to Drawer Parts Machining

An advanced woodworking machine, so new it is still in final stages of development as FDM goes to press, promises to speed up drawer production to a new high.

The double end dovetailer, designed and manufactured by Onsrud Machine Works, Inc., will dovetail both ends of a drawer front, drawer side or back simultaneously. It is capable of producing 20 completed drawer parts per minute, according to the manufacturer.

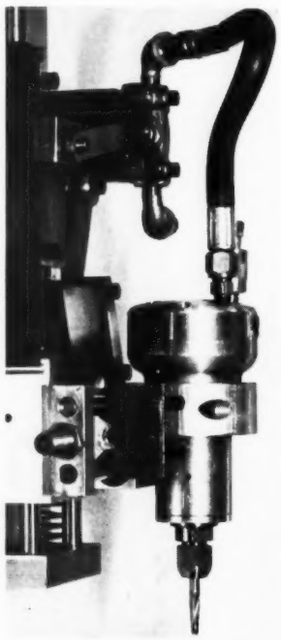
But that is not all. Among the optional equipment designed for use on the machine is the "Woodpecker," a vertical air-powered drill which turns at 50,000 rpm. It drills two holes for drawer pulls during the dovetailing cycle. A device is also available for slotting for drawer guides.

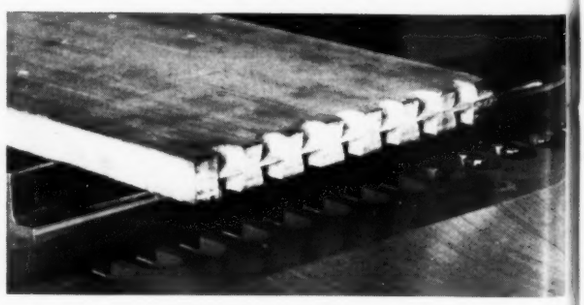
The machine may be hand fed with the finished work automatically returned to the operator. Or, the machine may be magazine fed. Still another option permits the installation of a conveyor to the outfeed end. Work can then flow automatically to other machining or sanding operations.

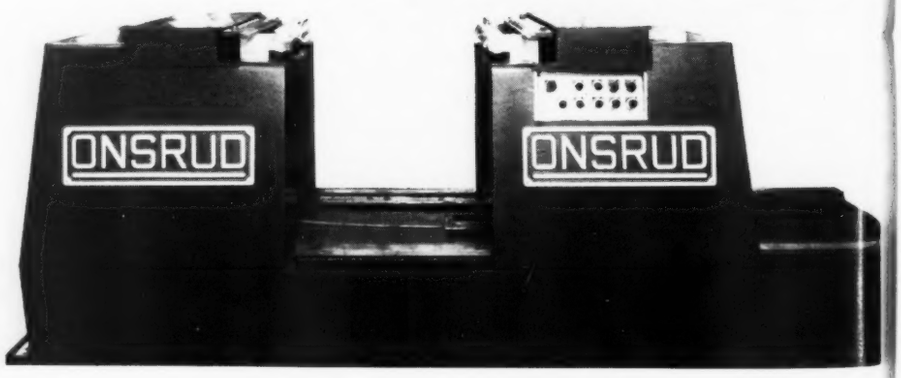
Set-ups for various drawer part widths is simplified. Guide bars serve as stops for various widths of stock. These may be changed to various other widths by a quarter turn of the shaft to which they are assembled. This permits a change to a different stock width in seconds.

The machine is constructed upon a sturdy base which reduces vibration and permits accurate machining. Push button controls are easily accessible to the operator.

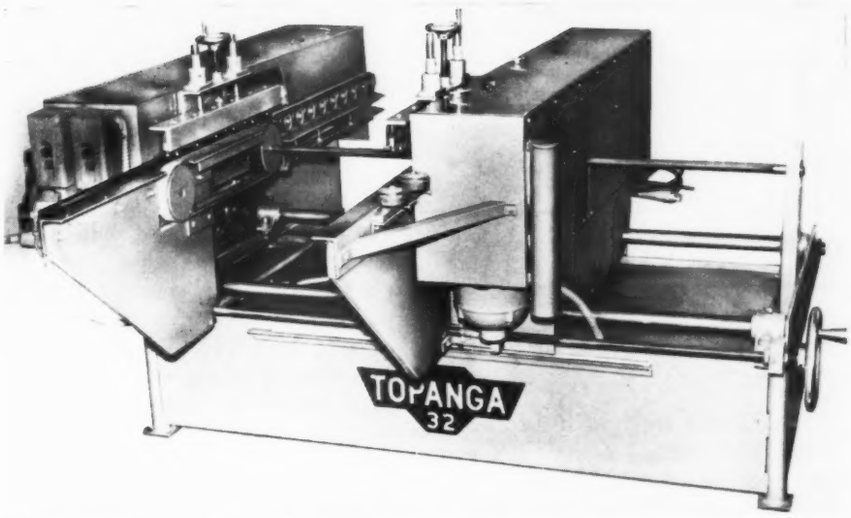
For more information Circle Reader Service No. 494







NEW AUTOMATED DOVETAILER, photographed at Onsrud plant while still under development. Left is "Woodpecker" which automatically drills holes for drawer pulls. Immediately below shows drawer part being withdrawn from cutters. Bottom is machine base assembly.



AUTOMATIC DOUBLE EDGE SANDER is equipped with slip-type platen heads which are easily and quickly interchangeable for various profiles of work. Two vertically running abrasive belts can be tilted at angles in relation to the stock.

Automation Comes to Panel Edge Sanding

A new automatic double edge sander, Model No. 32, developed by the Topanga Engineering Co., is designed to end tedious and costly hand edge sanding operations. Depending on the platen backing material and abrasive belt used, the machine will rough, size or polish at standard feed speeds ranging from 25 to 75 f.p.m., in one pass, on wood or plastic-to-wood combinations.

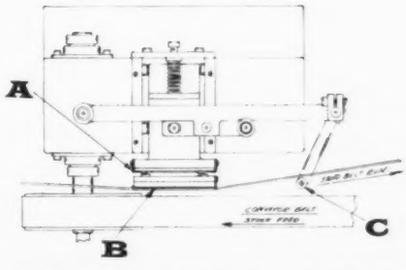
Stock is fed positively through the machine by two rubber topped conveyor belts. Stock clamping pressure is adjustable and results from a series of rollers mounted in the upper pinch rails. Both rails are individually adjustable for stock thicknesses from 0 to 6 inches in height.

The sander is equipped with two opposed mounted, vertically running abrasive belts, backed in the work area by formed platen heads. Belts operate at 4500 s.f.p.m.; each belt assembly is individually mounted and power driven. Belts are easily interchanged and can be tilted at an angle in relation of the stock, increasing efficiency and prolonging belt life. Oscillation of both sandbelts is maintained in horizontal and angled planes, is adjustable in width and rate of movement, and is activated by air cylinders.

The left belt assembly is stationary-mounted; the right side is adjustable to accommodate a wide variety of stock widths when sanding two edges simultaneously. On double edging operations the machine has a stock width capacity of 6 in. minimum and 50 in. maximum. For single edging work the machine will handle from ¾ in. to 6 in. on either side of the machine.

Slip-type platen heads are easily and quickly interchangeable for various profiles of work. The platen head of the right assembly is equipped with a size-sensing device which automatically positions the work head for oversized material. The sanding head is connected through a linkage arrangement to the sensing bearing. On the left side of the machine, stock is registered against a guide rail. ■

For more information circle Reader Service No. 495



KEEPER RAILS hold platen heads in place, allow fast interchangeability to accommodate a wide variety of profiled forms.

REMOVABLE SANDING HEAD is spring mounted; has "float action" for conformity to stock variations.

LINKAGE ARRANGEMENT connects sanding head to the sensing bearing to automatically position the work head.

GROWTH AT BROYHILL

FROM PAGE 25

dining-room suites a day, completing one upholstered chair every 45 seconds and one sofa every three minutes. At all times, production is geared to maximum smoothness. Behind this production are more than 3,000 employees in plant, management and administrative positions, backed by a national sales force of 185. Peak production results in 150 carloads of furniture weekly.

To produce these goods, a highly systematized meshing of technological and human resources is necessary. To cite an example of the number of production workers required to make a single item, the Premier Division released the following figures when it introduced "Inspiration."

To make one chair—300 workers;
To make one table—350 workers;
To make one chest—400 workers;.

For one cutting of "Inspiration," Premier says it consumes the following quantities of materials:

Lumber—500,000 board feet;
Varnish—500,000 gallons;
Nails—250,000 heads;
Glue—200,000 pounds of urea resin;
Hardware—100,000 pieces.

Production innovations and installation of progressive technological apparatus was another stepping stone for Broyhill Furniture Industries, and the firm grew to be recognized as a leader in this area. In 1935 Broyhill was one of the first companies in the nation utilizing overhead chair conveyors; today the practice is almost universal.

Other pioneer installations were the chip core plants which were set up about four years ago. In 1953, J. E. Broyhill and production manager Clarence Beach went to Europe to observe particle board operations. Upon their return, machines were installed in two of the firm's plants. Even today, there are only about half a dozen such plants in the South.

With this system, waste lumber goes into a chipping machine, from which a screening device separates the chips into proper size for pressing into chipboard. A glue-mixing machine dispenses the correct amount of glue for heat-setting, and this is mixed with the chips. In the final step, chips are pressed through an opening between the heated plates of the chip core machine.

Research into consumer sales of

TO PAGE 43

FDM

WOOD TECH

CARL A. RISHELL

Trees for Furniture—Part III

Shortly after the superliner, "United States" was launched, the traveling public was sent a pamphlet by the steamship company, citing the wonders of the new ship—its speed, luxury, comfort, reliability and, above all, its safety.

It was most interesting, but to a lover of wood, the booklet made one discordant claim, i.e., to reduce fire hazard to a minimum, the only wood to be found aboard the ship was in the butcher's block and the grand piano! Such statement was hard to believe, for any structure as large as the new liner would normally contain items made of wood.

Emphasizing the absence of wood as the criteria for safety was resented by those of us who know that wood construction, properly done, not only is safe, but provides beauty and comfort that people need and desire.

Several months after its maiden voyage, I went to Europe on that great liner. Most of the claims made for it in the booklet were true—three swimming pools, two or three full-sized theatres, shops that rivaled those on Fifth Avenue—sumptuousness throughout; powerful engines and tremendous speed.

But what about the boast of no wood? To my disgust, that also was true. On the first day out, I started looking for it and found the decks to be of composition material and the deck chairs, ship rails, exterior and interior trim were aluminum. All staterooms were furnished with steel or other furniture, as were the dining and other areas. Undoubtedly, the crew carried steel toothpicks and briar pipes must have been outlawed. It seemed that I was about the only combustible thing on the entire ship.

The quest was resumed the next morning, and lady luck really smiled. While shaving, my eye roved over the gimmicks and gadgets of the luxurious bathroom and stopped suddenly on the one fixture that just had to be of wood. You guessed it—the toilet seat was made of wood. Of course, it was well camouflaged with pink plastic, but nevertheless, it was plump, solid and warm looking. A few passes with a metal-dulled knife blade quickly exposed the hidden shame of the great liner!

The sequel to this was a series of letters to officials of United States Lines and a demand that either the 1500 toilet seats on the ship be changed to metal, or the advertising claims be modified. The latter, I understand, has been done.

Fine, fast and beautiful as the "United States" is, her interior is not as attractive and friendly as that of her running mate, the "America," and most of the foreign liners, in which are beautiful wood paneling and many other decorations and furnishings of precious woods. For example, the British liner "Queen Elizabeth," for several years after the war, proudly displayed wood stair railings on which hundreds of GI's had carved their initials—a wonderful memorial, for many of those boys did not return. Those carved wood railings may have been replaced and, undoubtedly, preserved for posterity in some museum.

But, getting back to our study of the more common furniture woods—there is no species that is nicer or more easily discussed than cherry. It has great beauty and a fine tradition.

To most Americans, the cherry tree symbolizes "truth," regardless of whether or not one believes the story of George Washington and his hatchet. Selection of the cherry tree for the kernel of the amusing yarn is indicative of the value traditionally placed on this species. No wood has been more favored, for its charm and service, in more than 350 years.

As for cherry's beautiful coloring, the world's most famous artists have been unable to capture its true beauty. The reason is that no single color combination describes it.

The color of cherry furniture or paneling changes with every variation of light. It almost seems to change to suit one's mood.

All who have worked with cherry furniture, either in the production plant or in the home where it is polished, know from experience how smooth the finished surface can be. Regarding strength, cherry has more than sufficient for most purposes.

Cherry has a specific gravity of .50 which, of course, is about midway of the range, neither the lightest nor the heaviest wood. It is medium hard and has good strength properties such as screw holding, bending strength and toughness. It is easily machined and excellent for finishing.

One of cherry's most valued properties is its high degree of dimensional stability under varying atmospheric conditions. This has made it the favored wood on which to mount photoengraving and electrotype plates used in printing.

The heartwood of black cherry varies from dark red to a light red, and has a distinctive luster or sheen. Its sapwood is white, as in most other species; fortunately, this sapwood in old-growth trees is in a comparatively narrow band. Commercial cherry growth is distributed over a fairly wide range that extends from southern Canada throughout the eastern half of the United States.

The popularity of cherry furniture seems to vary more than it does for most of the fine cabinet woods. During colonial days, much of the early American fine furniture was made from this species. This was quite natural as it was not only one of the most beautiful woods available, but it was fairly abundant in those areas which were settled first.

Because of its fine machining properties, it was not difficult to work with the hand tools of that day. The wood's fine texture contributed to its popularity, for it did not require much filling and sealing to obtain a satisfactory finish. The competing species for the furniture markets of those days were black walnut, also a great favorite, and birch, maple and oak.

In the late Colonial days, the importation of mahogany was carried on at a relatively substantial basis. This was possible because of increased

shipping facilities. Also, quite a number of families had acquired substantial wealth and could afford the purchasing of imported timber which was denied the earlier settlers.

As a consequence, the older American antique furniture usually is a local species, none of which are more popular or sought after than are pieces made of cherry. The popularity of antique cherry furniture undoubtedly has had its effect in popularizing it for the modern furniture of today.—*Carl A. Rishell.*

REDESIGN OF PACKAGING

FROM PAGE 21

permitting speedy unloading of trucks by fork lift equipment. Before the change, containers arrived at the other plant in bundles of various sizes, and had to be unloaded by hand.

Equally important to cost consideration is the improved appearance of Herman Miller's distinctive new shipping containers. As modern as the furniture they contain, the corrugated units serve double duty by protecting the contents during transit and at the same time providing a tasteful traveling billboard for the company.

Incorporating a recognizable design motif created by George Nelson, the new containers combine colorful, three-color printing in red, blue and black with an off-white, "oyster" linerboard. Herman Miller previously relied entirely upon brown Kraft shipping containers with messages printed in red and black, and they still retain some of the brown containers.

Hugh DePree, executive vice president of Herman Miller, Inc., explains the merchandising approach of his company's new containers with the thought that:

"We want everything that we produce to demonstrate vividly our company's design sense and ability, and to inspire public taste to an understanding and desire for the clean, functional and modern design inherent in all of our products."

The same thinking applies consistently to the company's printed literature, and to the appearance of its offices and plants. ■

NAFM FAIR

FROM PAGE 28

how to use each to best advantage; what methods you should follow in their application.

—Labor relations—what to expect in this vital area. How can your individual problems in this regard be satisfactorily solved.

Plant management sessions, covering woodworking and upholstering, will be held on Saturday and Sunday mornings, August 27 and 28, to enable those whose duties require their presence in the plant during the week to attend. Manufacturing executives are slated to attend sessions Monday and Tuesday mornings.

Of special interest to the 2,000 furniture manufacturers expected to attend the Fair will be machinery exhibits and demonstrations by both American and European suppliers. One of the exhibitors, Onsurd Machine Works, will introduce its new automatic double end dovetailing machine which features simultaneous dovetail, drawer-pull boring and center-guide notching. The newly devel-

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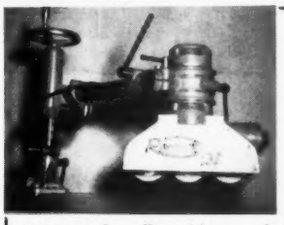

WHAT IS A BARGAIN?

In equipment, it's a machine which performs and produces as well as—or *better* than—a higher-priced unit . . . like the

ROMA "130" THREE-ROLLER POWERFEED

It has exceptionally strong "pull"; sturdy motor; light weight; simple adjustment for all positions and directions; easy swing-away for change of cutter—click-back return; many other features. And *it's a bargain:*

3-phase ROMA "130", complete, $395.00

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Order today — satisfaction guaranteed — or write for full specifications

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FOR DATA CIRCLE FDM NO. 1204

EDGE GLUED SOFT MAPLE PANELS

FLAT AND STRAIGHT

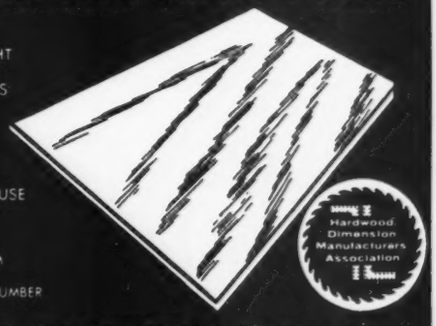
TIGHT GLUE JOINTS

SMOOTH FINISH

PROMPT SHIPMENT

ECONOMICAL TO USE

PRODUCED FROM FAN-AIR SEASONED LUMBER



Hardwood Dimension Manufacturers Association

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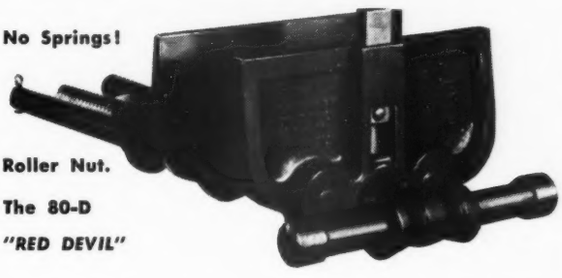
FOR DATA CIRCLE FDM NO. 1211

For finer craftsmanship woodworkers prefer—

ABERNATHY VISES



No Springs!

Roller Nut.

The 80-D

"RED DEVIL"

The most popular woodworking vise among Cabinet, furniture or pattern makers because of its dependability and smooth action.

■ **NOTHING TO GET OUT OF ORDER**

Roller nut vises are so constructed that it is practically impossible for the nut section to rise or the screw to spring out of engagement. Tried and Tested—Abernathy vises in 60 years have proved their worth in reliability, sturdiness and ideal action on any woodworking bench.

Write for 12 page booklet

ABERNATHY VISE & TOOL CO., 130 W. Home Ave., Villa Park, Ill.

FOR DATA CIRCLE FDM NO. 1184

COSTLY GLUE FAILURES

Can you spot the causes?

What are the remedies?

Most wood glue failures are the result of human error, according to a leading supplier of adhesives.

During the past several months National Casein Company has been analyzing field reports of glue problems. Case histories were developed by sales representatives who were required to seek out causes of failure.

Almost identical problems appeared in Southern California as in New England. With few exceptions, glue problems centered themselves in certain areas, as follows:

1. Varying Glue formulas. Glue room workers often changed the recommended glue formula in order to facilitate the operation. In some cases too much catalyst was added to speed up setting of the glue line, without regard to assembly time or viscosity of the mix. In other cases, too little catalyst was added in an effort to extend pot life or assembly time. However, most trouble resulted from a general indifference to the importance of adding just the right amount of ingredients to each mix. A common occurrence was too much flour or too much water in the formula.

2. Improper gluing temperature. Inadequate temperature control was found to be the cause of many glue failures. Windows and doors would be left open, causing fluctuations from recommended temperature. Workers would adjust plant temperatures to suit their comfort rather than the requirements of the glue being used. Cold wood was also found at the bottom of many glue failures.

3. Unclean gluing equipment. Poor housekeeping caused many problems. Example—a small amount of casein glue in a mixer would result in the failure of a batch of resin glue mixed in the same container, and vice-versa. Lumps and hardened glue particles caused ripples and dimples in plywood and plastic tops. Dirty containers and mixing equipment were the source of many potlife problems.

4. Glue failure as result of overstorage. When glue spoilage was reported it was found to have been in storage past the recommended date. (National Casein drums are stenciled with a "use before" date). It was frequently found that glue most recently delivered was used ahead of drums which had been in storage for some time.

Frequent announcement bulletins, issued by the glue supplier, have sometimes gone unheeded. In many cases, after a short flurry of supervision, the shadow of human error would reappear and glue problems would again develop in the plant.

To help prevent such recurrences, National Casein has prepared four colorful posters (10 x 13 inches) to be posted in glue rooms. These placards, illustrated with this article, caution workers against improper gluing temperatures, varying of glue formulas, unclean equipment, and overstorage.

Copies of the posters are available without charge on request from manufacturers who use wood glue. ■

don't vary your glue mixing formula
without consulting your supplier
National Casein
be sure you use your glue by the date on the drum
National Casein
good gluing starts with CLEAN EQUIPMENT
National Casein
Don't be a FRESH AIR FIEND!
you must maintain 70° for good gluing
National Casein

FOUR COLORFUL POSTERS, available from National Casein Company, help remind glue room workers of important rules in glue handling and application.

To receive set of four posters, illustrated above, circle Reader Service No. 469.

NAFM FAIR

FROM PAGE 41

oped machine, still in final stages of development, will be demonstrated through motion pictures. *(For further details and information on this new automatic dovetailer, see article on page 38)*

Onsrud will also feature its Model W-672 Contour Profiler, said to be capable of producing most of the type of work now done by hand shaping. The unit consists of rectangular table with a reciprocating table stroke, for carrying the work past the cutter and return, a high speed cutter head that can travel in or out at right angles to the work, and an automatic air clamping system to hold work securely in position.

The Kohler-Joa Corporation will exhibit scale models of the No. 193 tenoner, the No. 143 tenoner and the No. 191 slat bed machine. The firm will also illustrate with slides all machinery in the Jenkins Woodworking machinery line.

European woodworking machinery will also vie for the attention of attending furniture manufacturers. Among the exhibits will be automatic feeder attachments, shapers, moulders, jointers, roller coaters, veneer splicers and belt sanders, some to be shown by American distributors and representatives.

The Auto-Nailer Co. plans to feature its Atlas-9 Model nailing machine, said to drive 145 nails per minute, forming its own nails up to 2¾ in. in length. A Combination cushion boxing and zipper sewing machine, the CBZ-65, will be highlighted by Apex Machines, Div. of Apex Sewing Machine Co., Inc.

A variety of models in power and hand tools will also be demonstrated. Senco Products, Inc. will present its complete line of pneumatic tackers and staplers, including a new Model J and a recently released F-50 and F-75 model, with a 4 in. depth jaw. The Paslode Company will place special emphasis on its new S-1 and B-1 Clippers and PR staplers, while Vail Manufacturing Co. will present a new Vulcan No. 5 stapling hammer.

Among materials to be exhibited will be a new Nopcofoam Type "B" urethane foam, introduced by Nopco Chemical Company. The product is said to give greater latitude in furniture manufacturing and new com-

TO PAGE 49

GROWTH AT BROYHILL

FROM PAGE 39

Premier case goods indicated that the most desired finishes were woody, without a painted look, and light. As a result of this research, since October, 1959 all Premier case goods have been bleached in a new finishing area established at Lenoir Furniture Corporation. According to production manager Clarence Beach, "The object is to get a light, deep, uniform finish, without an opaque toner. For depth of color, we bleach, then stain back."

The bleaching area comprises 30,000 square feet. Installation included a floor-type conveyor by Palmer Bee Company, four De Vilbiss spray booths, and four large De Vilbiss drying ovens. Hydrogen peroxide and caustic solutions are utilized and any desired degree of bleach can be obtained. Bleaches formulated in this operation include walnut of "Saga," cherry of "Invitation Classic," and walnut and pecan of "Trianon."

Woods used by the company in its various products are: yellow poplar for core stock and oak for drawer stock, obtained locally from Appalachian forests; red gum, a southern hardwood, for drawer rails, interior rails and other parts; pecan veneers, cherry veneers; considerable quantities of African mahogany and American walnut veneers; a fair amount of African mahogany and Philippine, American elm, pecan, and cherry:

Four types of finishes are favored at Broyhill:

For toned mahogany and walnut suites—urea formaldehyde top coats (resistant to acids, grease, alcohol, nail polish and other stains—a sought-after characteristic of synthetic materials);

For clear woody and deep-bleached finishes—waterwhite lacquer topcoats;

For white finishes—acrylic lacquer enamels and topcoats, for tougher, clearer, better adhesion, and for reduction of chipping to finish;

For traditional mahogany and cordovan mahogany—high solids gloss lacquers, rubbed to a gleaming plate-glass surface.

As a further aid to production, a highly developed mechanical research department of six men is constantly investigating, recommending and supervising the installation of new equipment; and is modifying, standardizing and renovating the old. In addition to an engineering division, an engineer is employed at each plant.

Quality control at Broyhill is "the best in the furniture manufacturing industry, we think," says this department's supervisor, Horace Chester. There is one director in each plant, coupled with several inspectors from lumber yard to packing station.

The vast Broyhill organization can be traced back to the vitality and determination of two men, brothers born in a modest rural homestead. In 1905 the late T. H. Broyhill paid $2,000. for a share in the Lenoir Furniture Corporation (predecessor to the present company), then cut timbers on his sawmill to raise the money. After stints at hauling tanbark behind a mule team, barbering to pay his way through school, farming and logging, younger brother J. E. Broyhill joined the firm. Today, J. E. Broyhill is a ranking Southern industrialist, piloting the organization through the intricacies of volume production. With drive and vision, he believes in re-investing the profits. His son, James Broyhill, operational director, reports, "My father feels the way to success is in work, work."

Aiding management to produce high-style, quality goods are four resident designers: Mel Smith, senior designer; Lewis Land and Bill Scott, case goods; and Fred Withers, upholstery.

Not to be overlooked is the Broyhill sales force, and its growth with the company. At the end of World War II, when workers, customers and salesmen were short, Broyhill had 12 national representatives. In 1960 the national sales force is pushing 200 men. New members undergo a complete indoctrination course, including marketing manuals and a special six-week training program.

Thus, through creative utilization of modern business methods, Broyhill Furniture Industries has found a formula for steady growth in production and sales.—*Carolyn Knuemann.*

CONTROLS FOR MANAGEMENT

FROM PAGE 19

Basic Data Required

Exhibit 5 is a tabulation of typical sales data. *Exhibit 6* shows a few elementary ratios constructed from that data. These ratios evaluate salesman effort in terms of productivity, effectiveness, economy and responsiveness to direction from management. Of course, in presenting these brief examples, it is assumed that sales management is armed with realistic targets that supports the company's total economic needs.

The following are brief descriptions of some of these ratios:

Ratio SV: New Customer Sales Productivity

This ratio measures what portion of the total sales of the man or the department was sold to new customers. The departmental equivalent of this ratio is of intense interest to top management if one of the company goals is the acquisition of new customers.

Ratio SXIII: Quotation Activity

This ratio shows what portion of the total number of contacts made by individual salesmen or by the department, resulted in quotations. This is an "activity," rather than a "productivity" type of ratio since this ratio does not predict just what accounts will be sold, and in what amounts, as a result of the quotations. If one knew from past history just what success the man or the department had with quotations, a rough prediction could be made. Tertiary Ratio SJ (shown later) shows the quotation acceptance and this can be applied to this ratio to temper its value.

The value of this ratio is important only when confirmed by other ratio movements. A high value could be the result of few contacts as well as a large number of quotations; a low value the result of many contacts or a small number of quotations.

Ratio SXXXVIII: Productivity Return Index

This ratio compares the dollar value of the sales and quotations with the number of accounts sold and quoted in order to obtain an average sold-quoted amount per account sold and quoted. Obviously this is a composite ratio of the average account sale and the average quotation. This is the proof-of-the-pudding index for any immediate period being evaluated. There is no tempering of the value to account for past successes like quotation acceptance or mortality. This type of ratio can be expanded to account for new and existing products and customers but is shown here in total form.

Exhibit 7 is a tabulation of cumulative and monthly performance data.

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CONTROLS FOR MANAGEMENT
FROM PAGE 43

Exhibit 8 is a list of a few tertiary sales ratios useful for broader control based on this data. The following describe some of these:

Ratio SA: Customer Potential Acquisition

This ratio reveals a vital fact in judging the progress of each man and of the department. This ratio relates the cumulative sales to date, to the customer's estimated yearly potential linearly prorated to date. This ratio requires the policing of the accuracy of the denominator—the customers' potential. If the potential has been underestimated then the ratio can become unnaturally high, and the man gets an unfairly high appraisal.

This ratio serves to uncover improper assignments of high-potential accounts to low producers. While the elementary ratios may establish the fact that a man is a low producer, and that he was or was not economic in his handling of expenses, this ratio shows the impact of his productivity and the probable future success in getting results with the potential assigned to him.

Very often, this control is used to determine the rotation of men and accounts for overall department's increase in potential acquisition.

Ratio SK: Quotation Mortality

This ratio takes into consideration that only a portion of the quotations are converted into sales; the rest die. How this trend continues for each man, and the department as a whole, is an important managerial control. The positive equivalent of this control is:

Ratio SJ: Quotational Acceptance

This ratio shows the portion of the total dollar activity which was converted into sales in the period under evaluation. Both Ratios SK & SJ show the effectiveness with which quotations are solicited and accepted. We know that some companies should not try to quote on everything that comes along. The company that does that turns into a quotation mill and spends a great deal of money grinding them out. Not only does the quotation function cost money, it makes planning difficult. This control shows to what extent the company, as represented by its sales department, selectively quotes.

Ratio SII: Current Trend Index

This ratio relates the average-company sales this month with the average-company sale to date, this year. The purpose of this ratio is to see whether the men and the department are advancing over the previous six months' sales productivity, or lagging. If the ratio value is below 1.00 it shows that present productivity is lagging; and if it is above, the productivity is showing an improvement over the past period.

Of course, there are many reasons why current sales productivity may be considerably different from past efforts. First of all, it is possible to put in the same efforts and not obtain the same results because of seasonal and regional variations. This also could be affected strongly by the nature of the product mix being sold. A product-mix revision could have a dramatic effect on this ratio with or without the influences of seasonal fluctuations. This type of ratio has its maximum value when it is expanded to show trends for territories, products

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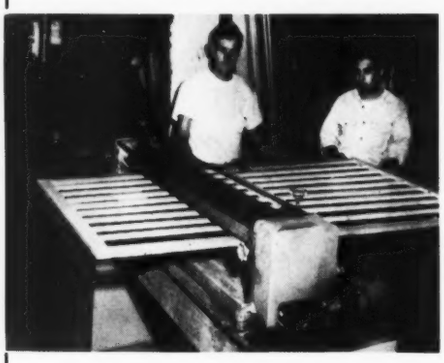

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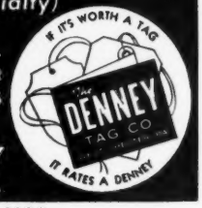

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and classes of customers. Smart management will usually make allowances, perhaps in the form of an applied variation percentage, to account for expected seasonal fluctuations. Then from that point forward, this control becomes very sensitive and incisive.

Managerial Control of Sales:

The ratios just discussed enable appraisal of the effectiveness of the individual men and of the department as an entire effort. The evaluations related to activity, performance, productivity, judgment on expense disbursement and some indications of future trends. A positive aspect of this effort is positive to the total economy if it is not negated elsewhere. This negation is difficult to spot immediately and requires time to shape into a pattern. In the meantime, its presence has created losses; when it develops into a "genuine" pattern it takes major surgery to remove it.

In the managerial *control* of the sales effort, we are interested in seeing the interweaving of the ratios, so that a pattern-producing set of circumstances can be seen quickly and eradicated or preserved. The following charts show how diagnoses can be made by ratio movements.

CHARTS 5 & 6: This chart and the next one show how sales management can react to an upper managerial directive to open more new accounts. Chart 5 shows the results of *positive sales management*. Here there is a gradual rise in the number of new accounts opened as a result of a sharp spurt in new-account contacts. There is also modest rise in the dollar value of the new-account sales and because of a change in emphasis, there is a slight decrease in overall sales.

Chart 6 shows the negative factors resulting from an improperly-managed drive for new customers. At first glance things look rosy: Overall sales as well as new account sales are on the upgrade—but the *number* of new accounts opened, dropped.

What happened here was that the drive was made on the new accounts opened very recently, and the sales manager fearing that effort was being channelled away from his old accounts, dropped the new account contacts rather severely—defeating the entire purpose of upper management's motive.

CHART 8: This chart shows the result of one-fact management. The Period shown for which the curves were provided, covered a period of 14 months. No ratio-control was in effect at the beginning of the period. But at the end, ratio-control was installed and then applied to the his-

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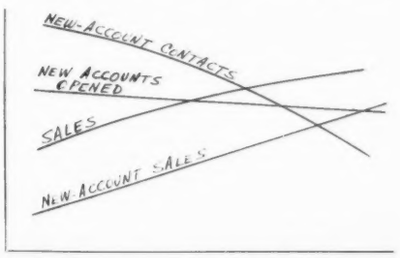

CHART 5. Hitting the new-business target by positive sales management.

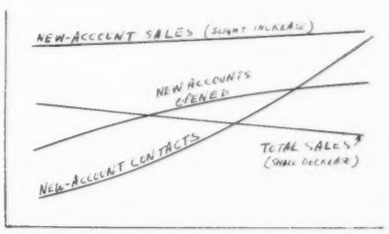

CHART 6. The negative way to get new business.

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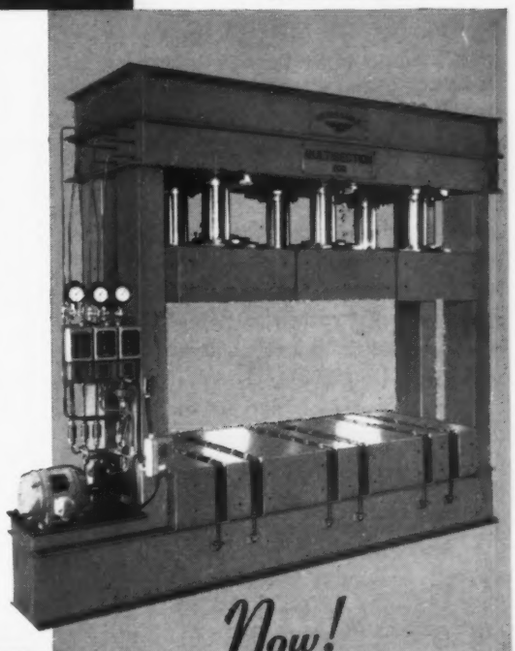

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torical data to "test back" the data, as if the ratios had been in effect at the beginnng of the period.

This management was very new-account conscious and so almost any act in the company was justified by an increase in new-account business. As the curves show, there was an increase in new-account business, but co-existent with a rapidly climbing expense level. There was also an increase in the sales of new products to *new customers*, but on the whole, the total new product sales were off.

The sales effort was so out-of-proportion in favor of new-account business that the existing accounts with high potential were neglected. The result was a drop in the overall sales level and a deceleration in acquiring customers' potential. This surely did not make sense, but the sales manager kept making a very strong point regarding the increases in new-account business and this hid the impact of these important negations in the economy: uneconomical expense levels existing, the unrecovered developmental expenses of the new products (another strong point was his increase of new products to new customers), and the drop in overall sales on which the company's growth and survival depended.

Had simple ratios been in effect, the trend would have been arrested within the month. In this case Tertiary Ratios SFF and SHH gave the weighted story from the beginning.

CHART 9: Here is a graphic showing of the activities of one salesman who undoubtedly was assigned the wrong "account mix". That is, sales management failed to consider the aspect of buyer-seller compatibility. This man was bright and energetic; he made many contacts and he spent on them a reasonable level of expenses. He carefully selected those customers to take to lunch, to the ball games, etc. He also matched up customer potential with their location and the amount he would have to incur on lodging and transportation in order to call on them—and he did this with intelligence.

On the other hand, the amount of customers' potential which he acquired was low—much too low for a man of his ability and this level barely changed. Coincident with a fixed level of potential acquisition, there was a fast rise in quotations and then a tapering off, to finally a rapidly dropping level at the end of the period.

Out of politeness some customers permitted him to submit quotations—but out of a dislike for the salesman by some of these customers, the quotations did not result in sales. It got to the point where it was embarrassing to allow the salesman to quote and at this point they fell off. Salesmen from competing companies were allowed to alter their quotes to make them readily comparable. But this salesman's quotes were received and forgotten. This condition is shown by Ratio SK which deals principally with quotation mortality. However, if the Tertiary Ratio SNN was in effect, the condition would have rapidly shown.

The trouble here was that the sales manager gave no consideration whatever to the question of compatibility; upper management maintained the tertiary ratios and brought this fact to the sales manager's attention with the request that he carefully review the present account assignments looking toward a maximum alignment between men and accounts.—*Spencer A. Tucker.*

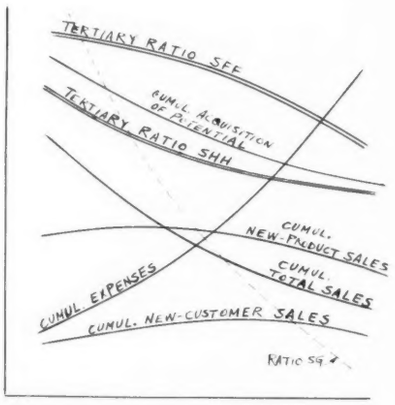

CHART 8. Evaluation of "one-fact" management by tertiary ratios.

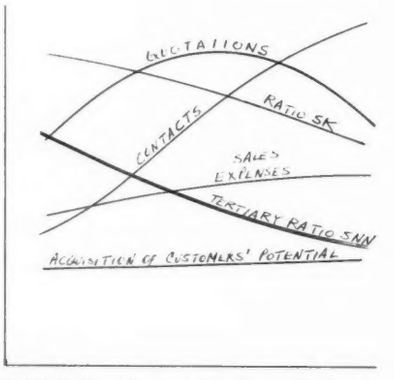

CHART 9. Diagnosis: Buyer-Seller Incompatibility.

have at least some professional publicity help.

Most large firms need a complete publicity agency or a staff of their own. Smaller firms, even in small towns, will usually find that there are many qualified persons available to assist them on at least a part-time basis. Sometimes there are free lance writers available willing to make additional earnings writing publicity.

For helpful "service" features for home furnishings editors, often a local interior decorator will be able to help create interesting room settings and supervise photos, and completely write the accompanying feature releases or suggest angles for another writer to develop into release form.

Generally speaking, a manufacturer should not attempt to do a full publicity job in the consumer newspapers without professional help either on his staff or through an outside agency. Occasional factual business announcement news releases may be sent out. But professional help should be secured for any program of sending out feature releases to newspaper home furnishings editors, or else manufacturers should work through the free services described last month.

However, if a manufacturer is certain he has a truly newsworthy furniture grouping and wishes to send out a feature release of his own, he should remember the importance of *offering exclusive photos* and *honor any promised exclusive.*

Even the manufacturer who plans no publicity program will usually at some time find it necessary to prepare a publicity release either for mailing out to announce some business or product news, or for distribution to the press in his own showroom or at special shows. If the release is to be mailed, a mailing list of appropriate publications is essential.

Here are some tips on the mechanics of preparing publicity:

Releases: Releases are of two general types, although sometimes elements of each type are combined.

News releases, such as you would use to announce new products at trade shows, markets, etc., and report new plant openings or personnel promotions; these are straight new stories giving the "Five W's and the H" . . . "who, what, when, where, why and how."

Feature releases are often also distributed at markets and trade shows, and are usually preferable to send to home furnishings editors of newspapers. When given a feature treatment, the release generally discusses the furniture in terms of what it will do and why it is important to the homemaker, often including decorating ideas in addition to providing basic facts about the furniture.

The best such releases perform an educational service for a homemaker while "selling" her on the specific furniture featured, and should be written in an interesting manner.

Any information sent to anyone, whether in release or caption form or on an information request form, should be typed to prevent misspellings and facilitate reading. Releases and captions distributed in quantity should, of course, be neatly mimeographed or reproduced mechanically in some clear, smudge-free form. All releases should be double-spaced, although captions may be typed with single spacing.

Photographs: If you can, it is best to take separate consumer publicity photos in addition to your straight salesmen's photos or ad photos. However, more and more manufacturers are now using interesting room-setting photographs for salesmen, and these photos will of course serve well for consumer publicity. If you use the same photos for advertising and publicity, however, they should be released for publicity first within the same readership channels. That is, for trade publicity before trade advertising, and for consumer publicity before consumer advertising.

If your salesmen's photographs must double for consumer publicity use, tell your photographer so that he will shoot for the special reproduction qualities required by newspapers, and so that he will attempt to get a home-like editorial-type atmosphere within the photos.

Even when every detail of the furniture must be shown, a great deal can be done through accessories and lighting, on a limited photo budget, to add a friendly mood that appeals to the homemaker. If your firm has strict objections to "humanizing" the salesmen's photos, then you should take additional publicity photos.

Economies can be affected by shooting these publicity photos at the same time as the sales shots. Usually it will cost very little extra to dress up the setting for publicity photos after the salesmen's shots have been taken. It is also a good idea to take a couple of slightly different shots of the same grouping. Choose different camera angles and, if possible, also make slight changes of accessories, to meet requests for exclusive photos from different sources. These slightly varied shots will be very economical and will give you many more publicity opportunities. Naturally, your best groupings should be selected for special publicity photos.

When judging photos you already have for publicity purposes, or shooting new ones, keep in mind that photos for newspaper use should never have large, solid, very dark areas, and should be contrasty for good, clear reproduction. Arrangements should be well-composed and uncluttered, but not bare, to be sure that the furniture will be readily visible in the printed photo. (Write to HFIC, 666 Lake Shore Drive, Chicago 11, Ill., to obtain leaflet and photo tips.)

Home furnishings editors almost unanimously want photographs without persons in them, except in rare cases where a person is necessary to illustrate some feature. For the straight *news* pages of the newspapers, photo editors generally prefer action shots and like persons in them.

However, unless you are doing an extensive publicity program of your own, you will not need such photos for trade or consumer publicity. Trade papers occasionally use action shots. But at special trade and consumer shows and at the markets, when trade papers or the newspapers and wire services sometimes wish such shots to accompany news reports of the show, you'll generally find that they prefer to take their own, and only your cooperation is required.

When sending photographs to press rooms or to associations that will be making their own quantity prints for free-to-you publicity programs, the size of the photo is not as important as when sending photos directly to the press. Photos should be at least 8″ x 10″, and larger salesmen's photos may be sent, but all should be good, clear glossy prints, since copies will have to be made. Best of all is to lend the actual negative, if your photographer will release it, to assure good prints for a *promised* feature release.

Captions: Never write on the back of a photo. Type the caption information on a sheet of paper and attach the top edge of the sheet with tape or rubber cement to the back of the photo, folding the caption over the front of the photo.

More important than clever writing, especially when merely supplying caption information for one of the "bonus" publicity services described last month, or to trade or shelter magazines, is that you include full information on each photo sent.

TO PAGE 48

"PRIME' SHOWROOMS & STORES"
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Give the name of the grouping, the name and address of the manufacturer, the designer if any is to be credited, the wood, metal or other materials used, and the name of the finish shown and of any others offered, with brief color descriptions if the names aren't self-evident. Add some information on the type of grouping (complete correlated collection or just a bedroom or dining room grouping for example), and give approximate retail prices of the pieces shown or of the grouping.

In addition, the caption can call attention to special design or service features of the piece or pieces shown. If the photo is being sent to one of the "free" publicity services, the caption information can be expanded to aid the persons who will prepare the feature. On the caption or an accompanying letter indicate whether the photo is being offered exclusively and for how long, if sent directly to an editor. Describe its complete "use" status if sent to a publicity service. (See last month's installment.)

Some other channels of publicity that the average manufacturer, with or without outside help, can readily service are trade magazines, "shelter" magazines and home furnishings sections of general consumer magazines.

These media are anxious to know any real news about your firm at each market, and any assistance you can give them in "covering" the markets will be appreciated.

Trade Magazines: Try to get photos and information on your forthcoming lines to the trade magazines as far as possible before the furniture markets. If you will not have photos available until just before the market, send complete information, at least, in advance. Straight product photos are acceptable for trade magazines, especially for advance market news.

Some trade publications will use design sketches for their advance market stories, and if photos will not be available until late it is wise to send advance sketches to help the editors prepare their advance stories.

To secure publicity in the market issues of most trade monthlies, your material must reach them early. Check the deadline dates for each publication.

Give a release date on the advance photos if you wish, but remember that the monthlies go to press long before the issue will be out, so the *publication* date, not the *deadline* date, is the only date that should concern you if you are worried about secrecy on your new designs.

Trade editors appreciate your problems in guarding your new market introductions and will assure you of cooperation in keeping your photos confidential before publication. All of the furniture industry trade magazines, from my own experience, seem willing to honor specified release dates, but before releasing sketches or photos to daily newspapers, check to see if the reporter will be allowed to honor release dates.

Most monthlies and special market publications come out so close to the markets that the value of the advance publicity to retailers outweighs any disadvantages of advance publication. Possible piracy can also be made virtually impossible, in the case of major groupings or collections, by releasing only photos of one piece, carefully selected not to divulge sufficient details for the entire grouping.

If you cannot send actual photographs in time to make the pre-market and market issues, send them as soon as you have them for the post-market follow-ups.

Select one photo from each important grouping or product type, and give complete caption information on each photo. Also send a descriptive news release or letter giving highlights of all your introductions. Include approximate retail prices if possible.

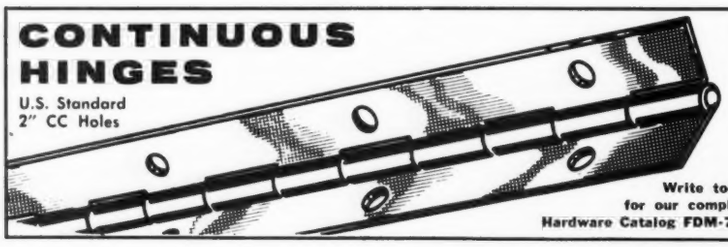
Remember that the trade magazines also need *glossy* photos, but can use glossy proof-prints made before style numbers, etc. are added to the photos for use by salesmen. To speed your publicity photos ask your photographer to make these advance publicity proof-prints.

Remember, too, that trade magazines are interested the year-round in ideas that are helpful to the entire furniture industry. If your firm has a new service, or has done useful product or cost research that is helpful to retailers, let the retail trade press know about it.

In sending out this information to trade magazines, you have two choices. You can treat it as a straight news release, and send the same release (mimeographed so they know it is a quantity release) to all of the trade publications.

A second choice is to first contact the retailer publication you consider most important and see if they are interested in an exclusive first feature. Naturally, if you give one publication

CONTINUOUS HINGES
U.S. Standard
2" CC Holes



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an exclusive, the magazine should be giving you a fairly complete article on your new product, process, research or service.

Which method to use depends somewhat on the nature of your story, and on how much detail it needs to be truly informative and useful.

The usual decision, on any major news, is a combination. That is, to send out one concise, factual news release not divulging too much information so as not to kill additional features, and then to follow up immediately by contacting one publication to see if it would be interested in an exclusive article giving the full story with many additional details.

Some publications concentrate more on the "service" angle and are more likely to run such articles. Naturally, you should never offer similar feature articles to two competitive magazines unless the first article has already been published and the second editor thus knowingly accepts similar material. A new angle should be found for the article even in this case. Identical copy should never be given out unless the editor who published the first article knew he was not being given the article exclusively or completely re-wrote it, and unless the second editor was also aware that it was duplicate material.

If a trade magazine should write you for a story on some process, service or other facet of your business, make a special effort to cooperate. Frequently editors will request a complete article that can be by-lined by an officer of your firm. If so, try to supply the article, hiring outside writing help if no one in your firm feels capable of writing the article. If you can't obtain help, do your best and concentrate on giving information.

If special illustrations are required, have professional photographs taken if the magazine has no photographer available. Good free-lance photographers are available at reasonable prices for "on location" shots such as plant or store photos.

Remember, too, that most trade magazines are interested in news of employee promotions and new appointments in your firm, especially appointments of salesmen and other employees who have extensive outside contact. Even when they are unable to publish these, the news releases are helpful to the magazines in keeping up their lists of whom they should contact for news at the plant or when visiting showrooms. In all such releases, clearly indicate what your firm manufactures.

In next month's final installment I will cover consumer magazines, radio and television, columnists and news services—plus a publicity check-list.—*Helen Williams.*

UPHOLSTERY TECH

FROM PAGE 23

new lighter weights have gained approval. Also in demand now are constructions of 32 x 28 count and 40 x 32 count, in natural and grey. Backfilled linings in shades of grey and taupe, despite higher costs, furnish the opaqueness and look of quality required by some makers.

In the wide scope of the cotton textile industry, laboratory research work today lends an important assist in the continual improvement of weaving methods and finishing processes. Just a glance at some of the less expensive goods, finished with modern know-how, is proof-positive that the cotton textile industry is now providing that desired luxury look at a smaller cost.—*Leonard S. Simon.*

NAFM FAIR

FROM PAGE 42

pressions for special seating applications. Other products to be unveiled at the Fair include a new concept in back-springing, to be demonstrated by Kay Manufacturing Co., new patterns in plastic laminates from Farley & Loetscher Mfg. Co., introduction of a folding leg by Wilkenson Manufacturing Co. and a recent design advance by Robert A. Schless & Co. incorporating a preformed drawer stop in a slide-panel, which by engaging a cutout in the drawer lip, affords a positive stop when the drawer is pulled out. The Pioneer Plastics Corp. will also introduce its Designers' Group of serigraphic screen prints by James Seeman which contain novel dinette designs for an unusual decorative appeal.—*Carole Nadwidney.*

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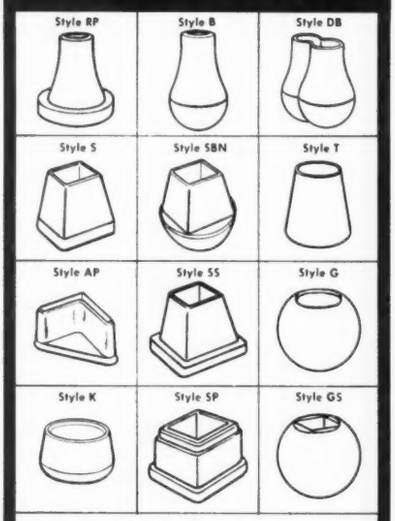

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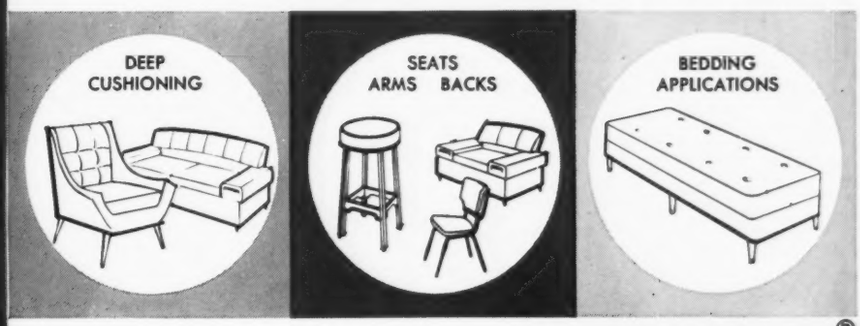

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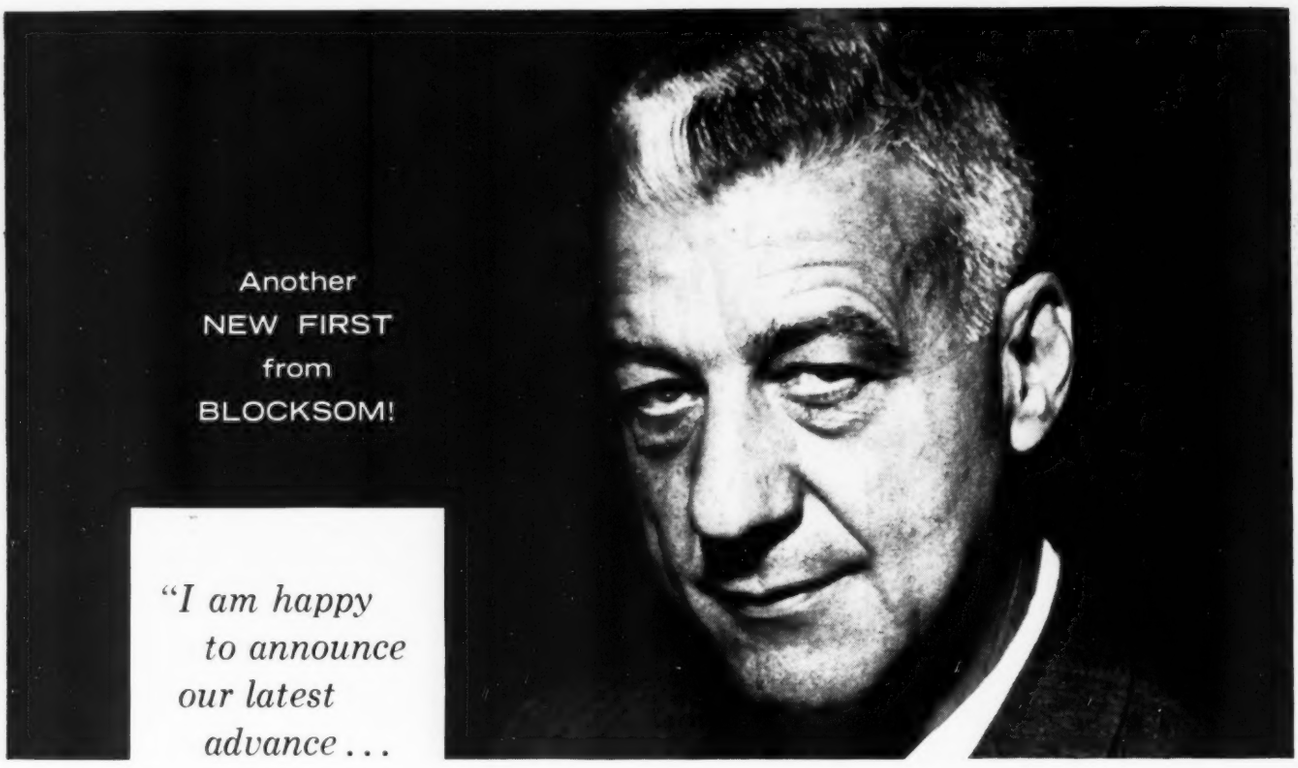

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